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ABSTRACT

The problem addressed in this practicum was that most teachers at the author's middle school were not fully using the school's network resources in their day-to-day classroom activities, in spite of district technology initiatives. The goal of the practicum was to empower a cadre of representative mentor teachers to fully utilize the school network capabilities to engage in and help others engage in non-traditional classroom learning activities using a variety of new technology resources. Based upon the results of a faculty questionnaire and of a review of the research literature, this problem was addressed by offering a network training graduate course, combining face-to-face sessions with distance education sessions, to a group of teachers at the school. These teachers would in turn be expected to share their training with fellow teachers. All 15 participants in the course made measurable progress with their networking skills and met the course goals in broad terms, but not all anticipated outcomes of the practicum were completely met. The researcher determined that this was due to the fact that some teachers in the class did not have the intended entry level skills, as well as to an organizational systems problem. Appendices include two general faculty questionnaires, the course syllabus, grading template, handouts, and the course evaluation questionnaire. (Contains 55 references.) (Author/AEF)

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ED 430 533

Optimizing a Middle School's Network Capabilities for Accessing Information, Improving School Communications and Interacting with the Global Community through Network Training

by
Laura A. Richardson
Cluster ITDE2

An Applied Dissertation Report Presented to
the Ed.D. Program in Instructional Technology and Distance Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Nova Southeastern University
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APPROVAL PAGE

The practicum took place as described.

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This practicum report was submitted by Laura Richardson under the direction of the adviser listed below. It was submitted to the Ed.D. Program in Instructional Technology and Distance Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

Approved:

February 26, 1999

Date of Final Approval of Report

Dr. Marsha Burmeister

Marsha Burmeister, Ed.D., Adviser

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following numerous phone calls between the school district and the university before it was approved in its final form.

The writer then began the process of creating handouts and turning the syllabus into a web page framework from which were links to handouts, and other related sites to clarify issues. A number of chat programs were explored before selecting NetChat for the course. Fellow subscribers to the district technology listserv were asked to test NetChat to see if the program would serve the purposes through trial chats with the writer, and several trial runs in December before the actual class began in January were successful. A number of discussion board possibilities were explored. The writer participated in two classes in a sophisticated web editing program specifically to learn to use its discussion board feature, before discovering that the server that would be used would not serve for the discussion board component. Then the writer discovered that a national private university would create a temporary discussion board for the practicum period and subsequently arranged to have one set up for the class. Additionally, the writer made arrangements with one of the local Internet providers to set up a listserv for the class, again for the duration of the practicum period.

Also, before the implementation date, the writer underwent the process of procuring cost estimates for, ordering and configuring new media center computers, as well as procuring price quotes for and working with technicians for placement of additional network drops in the media center. The writer visited the classroom of each teacher in the course to ensure that all their computers were properly installed with all the school's network programs and the Internet and that all were functioning and accessible. Introductory letters were sent to the teachers in the course and the writer made sure that

all teachers or participants had copies of the syllabus before the first class session. The writer ensured that those teachers who signed up for the course had completed the all phases of the registration process with the university through which the course was to be offered to meet that school's requirements for graduate status.

The writer coordinated the scheduling of a preliminary Grade2 class with the school's designated Grade2 trainer and the teachers in the class, finding substitutes for each so that they would be able to attend this session before the graded class officially began. The writer attended this session as the trainer's assistant. Then the writer coordinated the formal graduate course portion of the implementation from mid-January through mid-June (to allow teachers to receive recertification or graduate credit by the June 30th deadline), beginning with a Saturday class on January 21st. The writer used a stand-alone version of Grade2 for record keeping of class participation and activity with e-mail, the class listserv, the web discussion board, the chat room, team teacher mentoring and assistance reporting, as well as with tracking and grading web page updates, Internet Exchange projects progress, and the final project presentation and bibliography (see Appendix C).

During the months as instructor of this experimental distance education course for teachers at the school, the writer made it a priority to be open to questions and responsive to e-mail from the teachers in the class, primarily because of past frustrations experienced with unresponsive distance education instructors. The writer was careful to be explicit with giving directions, with describing requirements and expectations, again because of what was learned through experience about the nature of distance education and the need for distance educators teachers to take the time to explain things well. Thorough

handouts were developed which the writer felt anticipated questions the teachers in the class might have and then posted them to the web site so they would be always available. The writer sent reminders of dates for chat sessions, of dates for assignments, and further instructions on how to complete assignments through the listserv. The writer selected Lemay's Teach Yourself Web Publishing with HTML4 in a Week (1997) and had a local bookstore order enough copies for each teacher in the class. However, the writer still felt that a tremendous number of questions were being asked, and then began wondering if too much individual attention had been given or if some students were not as suited to the distance education format as others.

The writer spent many additional afternoons helping teachers complete their web page assignments and then made it a practice to post the pages the day they were received. Then announcements were sent to the class listserv, providing the URL of the new site so that all members of the class could view and applaud the work of their classmates. As the writer found helpful sites on the web, they were forwarded to the listserv. In short, the writer tried to encourage communication via technology as much as possible, which was a primary goal of the practicum.

The writer used the grading template (see Appendix C) to record student participation in the various stipulated areas set out in the syllabus. At mid-point in the course, it was necessary to send reminders to students who had not kept up with their assignment deadlines. At the end of the course, the writer created and distributed both a course evaluation questionnaire for the students in the course and a general faculty questionnaire to see if there had been noticeable effect on the school as a whole (see Appendix P). The writer arranged for a student in the class to distribute and submit

student course evaluations that had been provided by the university which was giving the graduate credit. One week after the class presentations of their final projects, the writer completed the paperwork for the university. The writer also prepared and distributed another survey to determine if there were other teachers in the writer's school and in the district, who might be interested in taking a course similar to this one (see Appendix Q).

The writer tracked the rate of discussion board activity, e-mail activity and web page submissions after the incentive of graduate credit had been removed and continued to encourage participation in the weekly chat sessions. The writer also continued to research and post URL's on the school's web site and then to spark discussion of these resources and learning opportunities throughout the duration of the practicum period.

Chapter V: Results

Results

The problem that was addressed in this practicum was that most teachers at the writer's school were not using most of the network's resources in their day-to-day classroom activities, despite district technology initiatives. After researching similar situations and solutions, the writer decided to offer network training centered on a web-based model to a group of teachers at the school. These teachers would be expected to share their training with fellow teachers in their team or in their department. The goal of the practicum was to empower a cadre of representative mentor teachers to fully utilize the school network capabilities to engage in, and help others engage in, non-traditional classroom learning activities using a variety of new technology resources already available to them.

The following paragraphs describe the results of the expected outcomes:

Outcome 1. Computers in the classrooms of 10 of 12 of the teacher mentors' and 20 of 30 of all other teachers' classrooms will be turned on and available for in the building during the day.

This outcome was met.

During a random walk down the school hallway during a "typical" day near the end of the spring semester, the writer was able to ascertain that computers in the classrooms 14 of the 15 teachers in the class were on and in use by either the teacher or the teacher's students.

Outcome 2. Teachers will be able to solve their own basic logging on and "how to get to and use" the network program questions as determined by a record indicating that less than 10% of requests for help are of that nature.

This outcome was met.

The request for help log kept in the media center indicated that less than 5% of the more than 500 problems reported dealt with using the network. The bulk of the requests dealt with hardware installation assistance requests, laptop/network configuration issues, student security violations, student AUP violation problems, virus loading problems, and problems resulting from older computer malfunctions.

Outcome 3. Twelve of 12 team representatives/teacher mentors will be skilled enough at accessing the teacher network programs to ensure that their team members are also able to access those programs.

This outcome was not met.

The measurement of this outcome was to be in the form of documentation that the teacher mentors provided through e-mail to the writer, through web board discussions, and/or through chat discussions. Though the volume of login requests the writer received greatly dropped, and though teachers in the class did report to the writer via e-mail a log of their assistance to their team mates, the documentation the writer received and the questions received from non-class teachers led the writer to surmise that they had not received sufficient teacher mentor assistance to correct this problem.

Outcome 4. Twelve of 12 teacher mentors will be experienced enough at accessing and using the student programs to help their students access and use the student network programs.

This outcome was not met.

The measurement criteria for this outcome was that the teachers would list each of the student network programs in the bibliographies which they turned in at the end of the course. Though the writer felt that all of the teachers in the course could use most of the student network programs, their bibliographies did not reflect that they had used them all for their final project.

Outcome 5. Twelve of 12 teacher mentors will have involved one of their classes in an Internet exchange project.

This outcome was met.

All 15 teacher mentors involved at least one of the classes they were teaching in at least one Internet exchange project. They reported their Internet project plans on the discussion board and then later reported the results of the project at its conclusion with another discussion board posting. Some chose to elaborate upon the Internet project as their final project presentations.

Outcome 6. Twelve of 12 teacher mentors will have used the Internet or a network program with direct class instruction.

This outcome was met.

All teacher mentors reported using the Internet and a network program with direct class instruction in their postings to the discussion board or via e-mail directly to the writer.

Outcome 7. Twelve of 12 teacher mentors will have used the Internet or a network program with class planning.

This outcome was met.

All teacher mentors reported using the Internet and a network program with class planning in their postings to the discussion board or via e-mail directly to the writer.

Outcome 8. At least 10 of 12 teacher mentors will create and then update their teams' web pages to publish student work and team news at least bi-monthly for an eight-month period.

This outcome was not met.

All 15 of the teachers did create at least three team web pages during the months in which they were being graded for the course. The writer expressed the expectation that the teachers would continue revising and submitting their web pages during the summer months, after the incentive of a grade had been removed. However, during the summer, the school district contracted with an outside company to create and maintain the web pages for all of the schools beginning late fall. Though some teachers did revise their team web pages welcoming the new students in August, most did not.

Outcome 9. Twelve of 12 teacher mentors will become proficient at using e-mail, the web message board, the class listserv, the class chat room and team web pages to improve school communications.

This outcome was met.

All of the teachers in the class mastered all of the communications media fairly quickly into the course and were very diligent with spreading this training among their team mates. As a result, most of the teachers in the writer's school have an e-mail address that they acquired during this period.

Outcome 10. At least 10 of 12 teacher mentors will begin using Grade2 and Pinnacle, the district's new attendance or gradebook and attendance programs. An

acceptable standard of performance is the ability to use both programs unassisted by the end of the eight-month period.

This outcome was not met.

Though all participants in the class attended the gradebook training sessions, the first session was conducted by the school's designated in-house Grade2 trainer who was unprepared, inexperienced with the program, and was unaware in the training session that he was working with a flawed version of the program. By the time the program problems had been resolved and an experienced trainer from another school led another session, the school was at the end of the third quarter. The writer did not feel it would be fair to the class participants to require them to move their gradebook data to the Grade2 program at that point. With that course requirement removed, the class participants devoted their time to other class projects.

Discussion

Table 1 below represents results from the questionnaire that was given when school started in August 1997 and again in May 1998 (see Appendices A and Q). Teachers in the networking class were given the questionnaire separately at the end of the May. In all but two items, scores indicated the general faculty had shown improvement in attitude and experience with using the network. In all items the teachers in the network class showed improvement over the scores of the general faculty.

Table 1

Fall and Spring General Faculty and Network Class Questionnaire Responses

1= Agree; 10=Disagree	Aug-97 Gen. Faculty	May-98 Gen. Faculty	May-98 Network Class Teachers
I am able to easily log in to and use teacher programs	2.7	1.6	1.1
I able to log into and use student access programs	2.6	1.4	1.1
I able to help students log on and use network	3.9	2.4	1.1
I have used Internet with class planning	6	3.3	2.2
I have used Internet with class instruction	8.1	4.4	3
I have involved one class in an Internet project	8.1	7.9	1
I am comfortable searching the Internet	4	4.3	1.8
I am comfortable directing students to search the Internet	5.1	4.8	2.6
I have constructed a web page	8.7	8.2	1
I would like to use the network for internal communications	3.8	5.3	1.3

As previously stated, the writer intended for this course to address the school-wide systems problem of under-utilization of the school network capabilities -- a problem the writer was able to see clearly from the broader perspective as network coordinator (Banathy, 1992; Senge, 1992). The writer intended that all of the teachers would become independent users of the school network so that they could serve as mentors for fellow teachers in the school, while they also acquired new technology skills that they would implement with their classes (Vaughan, 1996).

Though the writer determined that all fifteen participants in the course made visible progress and met the course goals in broad terms, the anticipated outcomes as set up at the beginning of the practicum were not all completely met. As noted previously, though the course was designed for technology committee members as representatives of their teams, not all teachers in the actual class were technology committee members and

the course then had learners with differing entry level abilities and attitudes toward use of technology (Dick & Carey, 1996).

The writer determined that a truer measurement of teacher's mastery at accessing teacher network programs -- rather than the tabulation of documentation e-mailed from the teachers -- would have been in the form of a hands-on test in a computer lab setting. Teachers may have been hesitant to report basic network knowledge considering that the network had been in place since October, 1996. Again, in retrospect, the writer concluded that rather than relying on teachers' own self-assessment of their accessing and using basic features of the student network programs, a hands-on test in a computer lab would have produced a more accurate picture of teachers technology weaknesses and mastery. However, there was no ambiguity in the number of acceptable web page submissions each teacher prepared.

Documentation that the teacher mentors recorded and discussed concerning their classes' participation in Internet exchange projects was a good use of the web board and let students in the class share with one another what they had done and how they managed the projects. Their documentation on use of the Internet or network programs with direct class instruction was another appropriate topic for a web board discussion. They exchanged ideas on technology curriculum strategies that worked and solicited suggestions for improving strategies that did not. Documentation of the teacher mentors using the Internet or network programs with class planning was another appropriate topic for a web board discussion. Teachers exchanged ideas on how they had pursued Internet topics or network programs to help them with their lesson planning.

It became clear to the writer mid-way through the course that there were distance education students and traditional education students in the class (Moore & Kearsley, 1996). Those who were not technology committee members were more likely to be taking the course simply to earn graduate credit, rather than to be intrinsically motivated, and were less advanced with their technology skills. The design of the course did not seem to provide them with enough synchronous interaction and it may have forced them to take more responsibility for their own learning than they were accustomed (Lozada, 1997; Moore & Kearsley, 1996). These traditional students were more likely to request more individual attention and scheduling for additional face-to-face sessions. However, other students -- almost invariably the technology committee members -- remarked in their course evaluations that they enjoyed the freedom the format of the course had allowed them to develop projects they chose and to work on their own (Moore & Kearsley, 1996).

Despite the fact that a pre-course design survey (see Appendix A) had indicated that the teachers considered themselves in need of developing expertise in using the school network programs, during the actual course, most chose to concentrate their efforts on learning various Internet applications, rather than on accessing or learning to use the school network databases. Similarly, though the syllabus was available over a month before the course began and though the writer had extensively reviewed it during the first face-to-face class orientation session, the writer believes that the verbal description of the course as "web-based instruction," gave some the impression that it would be primarily a web page creation course. This was to be the aspect of the course

that the students overwhelmingly most enjoyed and seemed most motivated to work toward mastering (Moore & Kearsley, 1996).

While the writer thought the teachers would appreciate the flexibility of participating at home in evening chat sessions, by the end of the course, many of the students were opting for the afternoon chat sessions at school, stating that there were fewer distractions in their classrooms than in their homes. This may have been related to another entry level skill the writer had not considered when setting up the chat sessions -- the varying typing ability levels of the students (Dick & Carey, 1996). One slow typist found faster typists in the class to pair up with her during the afternoon chat sessions to help her participate better in the discussions.

Whereas the writer expected the students to use the listserv and e-mail to ask questions, many of the students preferred personal contact with the writer-- either by telephone or by personal visit. Had the students been actually geographically separated from the instructor, the writer suspects they might have developed other distance education adaptive learning strategies, such as forming study groups (Ciardulli, 1998). Again, the writer observed this effort to lessen the transactional distance between the students and the writer exhibited primarily by the non-technology committee members (Moore & Kearsley, 1996; Reid, 1996).

Another deviation from the anticipated outcomes was that the writer had expected the teachers to follow the web-posted and printed timeline of due dates; however, in reality, many students viewed the due dates as suggested dates and turned in assignments late. The writer was not able to determine if this was because goals and objectives were not clearly emphasized from the beginning; or if, as suggested by one of the students in

the class, it was the result of the writer knowing all the students personally as a coworker; or if it was the result of a common misconception that distance education classes are easier and require less work than traditional classes (Moore & Kearsley, 1996; Warren, 1996).

Actual outcomes that exceeded anticipated outcomes included various teachers' forays into web page development. By giving students learner autonomy in the freedom to develop projects on their own, the writer was pleased to discover that they came up with web page concepts that the had not considered (Milone, 1998; Wulf, 1996). The daily updated web creations developed during a field trip set a precedent that the neighboring high school followed soon after.

The writer expected the class participants to continue to communicate via listserv, e-mail, and web board after the formal graded segment of the practicum had passed (see Appendix D). The writer also expected class participants to work on updating web pages for posting by early August, when the new school year began. The writer tracked the rate of discussion board activity, e-mail activity and web page submissions after the incentive of graduate credit has been removed.

Expected outcomes did not exactly match reality; however, the class makeup was also not exactly as the writer had envisioned. Though the writer had sought to have twelve teachers in the "Optimizing the School Network" class, each representing a different team, there were actually fifteen teachers in the class, but only seven were technology committee members. Two academic teams had two teachers each from their teams in the class; three teachers from the special education department were in the class,

two teachers from related arts were in the class, and two academic teams were not represented at all.

The writer faced a variety of challenges in the form of technology glitches, unexpected events, roadblocks and spin-offs to the practicum. Fortunately, the major problems became opportunities to think through new solutions for dealing with technology and did not prevent the practicum from continuing its course.

The writer's experienced a home computer crash shortly before the practicum implementation was to begin. At about the same time, the writer's laptop also failed and had to be sent to the factory. The writer was allowed to transfer coursework backup files onto the school server and for several weeks did all the practicum work at the school after hours and on the weekends. Because of a resulting reluctance to be totally dependent upon electronic storage of practicum notes, the writer purchased a Daytimer® for maintaining a hand-written record of the help log of network assistance, the journal of practicum events, and the general calendar recording system, which the writer has maintained and found to be very versatile and portable. Shortly after the laptop returned from the factory, the writer's e-mail service began malfunctioning and some of the messages from teachers in the class were bounced back to the senders before the Internet service problem was resolved.

The writer had planned that the Saturday training sessions would take place in the media center using 12 networked workstations and that the additional wiring and new computers ordered in October would all be in place by the start of the first class. However, when that time came, the wiring work still had not been completed and everything the writer had counted on being there was not physically in place in the media

center; only six networked computers were functional in the media center and only nine computers in the computer lab were networked. To adjust to this situation, the writer began the first Saturday class in the media center using one computer and a video projector with introductory lecture and demonstration. Then the writer moved the class into the computer lab and paired the teachers so they could help each other. After the teachers had signed up for an e-mail address and registered with the selected chat room, the writer then instructed the teachers to find and to work on a networked computer anywhere in the building. The first online chat was conducted in this manner. This actually proved to be a better dry run test of the chat program to gauge potential problems.

When it was time for the second face-to-face Saturday class, the writer had planned to work in the computer lab first and then move to the media center, which by this time had 12 fully functioning networked computers that the teachers could use. This time, the writer discovered that the lab instructor had changed the password on the computers. Therefore, plans were reversed again and the class was moved back to the media center for the first part of the day. After the mid-day break, teachers once again dispersed throughout the building to find a networked computer and work on building web pages. This day concluded with another wrap-up chat session, which proved to be a positive learning experience.

The writer and the class also had to deal with unexpected problems with the main chat program, NetChat. This program was chosen because it worked both within a LAN, within a firewall, and also outside the LAN on home computers. It was free and it did not require any downloads or installations. The writer created a chat sources page that linked

from the syllabus site and to other chat programs so that the teachers would be aware of and able to easily explore other available chat programs. During the second Saturday session, several of the teachers explored and then described informally to the rest of the class their experience with HargrayChat, a service of the local Internet provider, which was linked to the chat page. Fortunately, the teachers remembered this exchange because during the first scheduled home/school chat, the NetChat server went down, the teachers individually chose to switch to HargrayChat, and the class continued. On the third scheduled chat, this again happened and again, the class quickly made the transition to HargrayChat to continue with the class discussion.

An issue related to the chats that the writer had completely overlooked was the typing skills level of the teachers in the class. Several of the teachers mentioned mid-way through the course that they were not responding as often as the others because they were unable to type as quickly.

Another set of roadblocks, or hurdles the writer had to deal with was the loss of a valued part-time media clerk/graduate student, the extended absence of one of the full-time media clerks due to a long-term illness, and the frequent absences of the third clerk due to various family illnesses. The writer then had to put in even longer hours than ever because of the many days single-handedly running the media center, the school network, the school web page, trouble-shooting computer problems, installing computer software and hardware, scheduling and playing videos, checking out books, supervising often 100 students in the media center at a time, ordering and receiving materials. Additionally, during this period the school -- and the media center -- were under close scrutiny as the three district middle schools were undergoing their ten-year accreditation evaluation.

Additionally during this same time period, laptop teachers were requesting that the writer configure the five hundred student leased laptops to access the school network. Furthermore, the writer was called into a series of parent conferences to explain the necessity for imposing consequences to AUP violations dealing with virus and network security issues.

The writer experienced a major roadblock with the Grade2/Pinnacle plans for the teachers in the course. The writer had hoped to be able to conduct the training, but was only able to assist in the training because the writer had not been able to be go through the extended training or to spend much time trying to learn it. When the school's trained Grade2/Pinnacle instructor came in as a guest lecturer, he ran into a number of difficulties. One of the problems dealt with software incompatibility with the version of the program that had been loaded on the writer's school server. The district technology support staff was able to upgrade the program and clear out problems with corrupt files in the student database. However, this process took a matter of weeks and teachers were well into the semester before the problem was corrected. Mid-semester, the writer decided to ask an experienced trainer from another school in the district to come in and work with the teachers in the class. He was able to do this in an after-school face-to-face class. Though was able to clarify many of the questions, the plan of requiring teachers to use this electronic gradebook had to be altered.

Other roadblocks included the writer's discovery that some of the teachers were becoming more caught up in the web page coding than in planning for the content of the web page itself. The writer had not envisioned the teachers would have so much difficulty with the technicalities of the actual web page construction and file conventions

and came to the conclusion that a simple web editor would be best for a course of this nature. The writer also became frustrated at times that some of the teachers were turning in assignments late without first communicating that they would be late with their work. But the writer was gratified to later observe teachers who had been struggling with the technology at the start of the course, helping out other teachers during an afternoon technology workshop on a different topic.

Another roadblock came in the form of an involved citizen who thought the writer's school web site compared unfavorably in purpose with a private school's web site, and wanted the writer's whole web site removed. If this had happened, the class would effectively have ended because teachers in the class were dependent upon the "Optimizing the School Network" syllabus link to the Teacher Resources Page for their syllabus on the school web site. Though another web host could have been found, the whole focus of their web page work would have shifted as they were creating team web pages for this site as part of their course requirements. However, this episode resulted in the school and district administration giving more recognition to the work of the writer and to the teachers in the writer's class for the work they had done with the web site. The administrators approved plans to send the writer to a national conference for web training and presented the writer with the task of coordinating a spin-off massive web project combining the efforts of the school laptop students, the local museum, and community members. They further approved the writer's suggested plans to install a school web server and to design an intranet in which students and teachers could communicate internally by web pages that they would create and publish.

Another exciting web spin-off to the practicum work was the e-mailing of web pages from a week-long field trip initiated by a teacher in the course. This teacher took the school's digital camera, worked with the students to create web pages illustrating their activities, and e-mailed them to the writer for editing and uploading to the host web server. Students, parents waiting at home, teachers, administrators were all excited about what was going on with this field trip technology experience and expressed the desire that this be incorporated into other overnight field trip plans.

Though the writer's school administrators verbally endorse technology training for teachers, their absence in teacher technology training does not go unnoticed by the staff (Nevis, Dibella & Gould, 1998). Further, though the administrators praised the work of the teachers in the "Optimizing the School Network Course," and though they did stop by when one face-to-face session was in progress, the writer had hoped that one or all of them would have participated in the course.

The writer concludes that the course is in need of revision with a shift in focus to better match user interests (Nixon & Leftwich, 1998). The teachers' straying from the school network databases and applications while focusing more on Internet applications and web page design indicates unaddressed needs assessment issues (Dick & Carey, 1996; Salisbury, 1996). Perhaps the school network programs had less appeal because most programs were not as interactive and none were as current as web sources (Farmer, 1998). Possibly the school network with its series of passwords and logins is too securely restrictive and not user-friendly enough for teachers to want to learn to use these school resources (Deal, 1998; Koehler, 1998). Perhaps the network needs restructuring, or possibly the school technology planning should shift more attention toward acquiring

access to more web-based research engines. Possibly also what is in greatest need and demand now by this school's faculty for smoother technology integration is more instruction in web development – integrating multimedia, learning to create and use instructional web sites, refining web searching strategies (Charland, T. S., 1998; Junk & Fox, 1998).

In looking at outcomes that were not met, the writer noted issues that were actually systems problems and beyond control, but which are not atypical of similar schools (Salisbury, 1996). The school network underwent various installation upgrades and all of the student programs did not consistently work. The writer believes that some of the teachers understandably were frustrated in their attempts to use programs that were malfunctioning.

The problems associated with the school grading program training and missed deadlines for network hardware installations are indicative of misplaced technology funding priorities in that support issues have not been adequately acknowledged to implement the new district technology training initiatives. Though training has been included in technology planning, it is not fully actualized to optimize the system: the idea that staff must be allowed to let go of something in order to take on new roles is not reflected yet reflected in teacher evaluations or in student standardized testing (Koehler, et al, 1998). Likewise, the problem with the teacher mentoring process not spreading out to all of the teachers is indicative of teachers' time constraints for teaching other teachers, and of the need for more school personnel involved directly in school technology training (Carter, 1997; Cooley, 1998; Truett, 1997).

ABSTRACT

Optimizing a Middle School's Network Capabilities for Accessing Information, Improving School Communications, and Interacting with the Global Community. Richardson, Laura, 1999: Applied Dissertation Report, Nova Southeastern University, Ed.D.Program in Instructional Technology and Distance Education. Media Center/ Online Services/ Internet Usage/ Information Retrieval Skills.

The problem that was addressed in this practicum was that most teachers at the writer's school were not fully using the school's network resources in their day-to-day classroom activities, in spite of district technology initiatives. The goal of the practicum was to empower a cadre of representative mentor teachers to fully utilize the school network capabilities to engage in and help others engage in non-traditional classroom learning activities using a variety of new technology resources.

Based upon the results of a faculty questionnaire and of a review of the research literature, the writer decided to address the problem by offering a network training graduate course, combining face-to-face sessions with distance education sessions, to a group of teachers at her school. These teachers would in turn be expected to share their training with fellow teachers.

All fifteen participants in the course made measurable progress with their networking skills and met the course goals in broad terms, but not all anticipated outcomes of the practicum were completely met. The writer determined that this was due partly to the fact that some teachers in the class did not have the intended entry level skills, and that it was also partly due to an overall organizational systems problem which was beyond the writer's control.

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Chapter I: Introduction

Description of Community

The practicum took place on a southeastern resort island community in the United States. The island has a permanent population of 28,800 year-round residents with as many as 100,000 occupants during peak tourist weekends. The median age of community residents is 44.5 years with 5,076 residents under the age of 18. The community is in the midst of a population explosion with an increase of 21.5% since the 1990 census. The 1996 per capita income of the community was $25,171 while the median value of an owner-occupied home was $200,800. One-third of the island's residents are renters.

Writer's Work Setting

The work setting is a middle school of grades six through eight, with 1,200 students and 100 faculty and staff members. The mission of the school is "to serve the needs of all of our students during the transition period between elementary and high school, and to prepare the students for success in a technology-based society."

The writer's middle school work setting is housed on a cluster feeder-school campus that includes a high school, an elementary and a primary school. There are three such clusters in the district, with the district office being a one-hour drive from the writer's middle school.

The school district encompasses the whole county and has been characterized as a series of islands joined by bridges. Each grade at the writer's middle school is divided into 3 teams of approximately 130 students, with 5 teachers who teach math, science, social studies, reading and language arts. Students stay within their team for basic

academic instruction and then may "cross-team" with other grade-level students for their two related arts classes (band, chorus, art, physical education, health, careers, culinary arts, technology, service learning).

With the 1997-1998 school year, the eighth grade began a shift toward departmentalization, though the eighth grade teams are still in place. Along with the change toward eighth grade departmentalization, the school began multi-age grouping and now sends some advanced students across the street to the high school for certain classes within the day.

The school is site-based managed with a strong Collaborative Management Council (CMC) that has been in place since the 1994-1995 school year. For the past three years, there has been increased consideration and discussion among the staff, parents, and community concerning a move toward a year-round calendar that would consist of nine weeks of instruction followed by three-week breaks throughout the year. Currently the school follows a traditional school calendar, though there are other schools in the district which have adopted a year-round schedule.

The main middle school facility, which opened in 1991 to accommodate 1,000 students, now houses over 1,200 students; as a result, ten portable classrooms have been added. The present school population will split into two schools in the fall of 1999 when construction of a new building, 25 miles away, will be ready to accept 500 students.

The local area network (LAN) in place in the writer's school -- using Ethernet fiber optic, T-1 lines, running Novell 4.1 on Windows 95 workstations -- was put in place in October 1996, after the district approved the school's technology proposal in April of 1996. Prior to implementation of the current LAN, the writer's school was one of four

schools chosen to pilot a 10-classroom, administrative record-keeping and library catalog Novell 3.12 LAN running on DOS and Windows 3.1 workstations. Prior to the 10-classroom LAN, the writer's school ran two separate smaller LANs: one for the library's catalog and check-out system and the other for administrative records-keeping.

The current school LAN is attached to the school district's wide area network (WAN) which includes 18 schools tied to the district office. The district WAN includes Internet connectivity through the State Department of Education's Internet service. The district WAN will include an e-mail server and a web server in the near future. The district WAN staff includes two upper-level coordinators, three Novell-trained technicians, and one software trainer to field questions for all eighteen schools.

The LAN server and a 21-bay CD-ROM tower in place in the writer's school are located in the media center. Every classroom in the main building currently has at least one computer attached to the LAN. There are 12 computer workstations attached to the LAN in the administrative area, 16 workstations attached in the media center, 9 attached to the network in the computer lab. The portable classrooms are not attached to the school network nor will they be, as they are considered to be temporary.

Over 500 seventh and eighth graders are leasing laptop computers and thereby have access to their computers both in class and at home. Some of the eighth grade students who are leasing laptop computers were part of the 1996-1997 sixth grade pilot laptop program. These eighth graders who were part of the 1996-1997 pilot program were on the same team in which all students had laptops; however, when they went into the seventh grade, all three seventh grade teams included non-laptop students, new laptop students, veteran laptop students. In the 1997-1998 school year, there were two sixth

grade laptop teams in which some students had laptops and some did not and one sixth grade team that did not have any laptop computers. Because the laptop program was opened to all sixth and seventh graders in the 1997-1998, there were some new laptop seventh grade students in classes with "veteran" laptop students. Beginning with the 1998-1999 school year, the laptop program was opened to all grades and each team on each grade contained some laptop and some non-laptop students.

The six-year-old building is wired with an Integrated Learning System (ILS) which allows for video distribution from the media center into all classrooms, including the portable classrooms.

The staff and population served are also unique. The student population currently is 51% male, 49% female, 66% white, and 34% non-white. Fluctuations in enrollment reflect the availability of employment in service-related occupations. It is not unusual for students to withdraw and re-enroll at the school two or three times during their middle school years, though the vast majority of the students who matriculate in sixth grade are still enrolled at the school at the end of the eighth grade.

The teaching population is 20% male, 80% female, 90% white, 10% non-white; the administration is 33% male, 67% female, 100% non-white; the support staff is 26% male, 74% female, 40% white, 60% non-white.

A new principal, from outside of the community, began August 1997 to replace a principal who had been with the school for five years. The school has one assistant principal who has been with the school for over 16 years and one assistant principal who has been with the school for over 9 years.

There is one computer lab coordinator, whose role is in transition, and former special education aides who were two computer technicians who trained by the media specialist and computer lab coordinator to become part-time school. There is one media specialist, the writer, who also serves as technology coordinator and network administrator.

In the guidance office there are three guidance counselors, one attendance clerk, and one guidance OSIRIS clerk. (OSIRIS is the grade-keeping program that has been in use statewide since the mid-1980's.) The guidance clerk, who is responsible for running OSIRIS grade reports and fielding OSIRIS calls from teachers, is responsible for maintaining the Grade2/Pinnacle server which will centralize attendance and grade-keeping once it is in full use by all the faculty. (Grade2 is the new district-wide gradebook program and Pinnacle is the new district-wide attendance program. The two dovetail and are downloadable and uploadable for individualized as well as for centralized management.)

The school has a technology committee composed of one teacher from each team, one administrator, one guidance counselor, the computer lab coordinator, and the writer. A prerequisite to technology committee membership is home Internet access. Additionally technology committee members are expected to share their information and training with their teammates. Technology committee meetings are open for anyone in the school to attend; however, most meetings have been replaced by a recently established listserv which the writer setup with a local Internet provider.

All but new teachers have completed the Level I technology training course given on-site between June 1996 and July 1998 for either graduate or recertification credit.

Five sixth grade teachers of laptop students received laptop-specific intensive training as part of the 1996-1997 pilot laptop program. The new sixth and seventh grade teachers of laptop students began laptop-specific training in September 1997 from pilot laptop teachers. In the spring of 1998 E.I.A. (Educational Improvement Act) funds were made available to the schools for further training. The writer's school used it for stipends to pay teachers to attend laptop-specific training workshops and laptop-savvy teachers to conduct the training.

Writer's Role

The writer's role is school media specialist, network administrator, technology coordinator, staff development coordinator, and web page coordinator. The writer has been a library media specialist in the current school district since 1985 and in the current school since 1987. As sole media specialist, the writer is responsible for all media center operations and is assisted by two full-time and one part-time library clerk. The writer is school technology coordinator and building contact person, and is assisted by the school computer lab coordinator and the two computer technicians. Additionally, the writer is the school network administrator. The writer coordinated the school's implementation of the Novell 3.12 LAN installation that connected 10 classrooms, the administrative area and media center in 1994. The writer also coordinated the school's Novell 4.1 network upgrade to schoolwide classroom connectivity in 1996 and the school network's further upgrade process in the summer of 1998. The writer co-taught the school's "Classroom Applications of Technology" recertification course three times from June 1996 through May 1997 with the computer lab coordinator and assisted in conducting the spring 1998 teacher training workshops.

The writer fields calls from faculty and staff concerning hardware and software, network and non-network technology concerns as well as media center curriculum-support concerns. The writer is chairman and recorder of the school technology committee as well as coordinator for school technology staff development. The writer was responsible for putting the first school in the district on the World Wide Web in 1995 and maintains the school web site.

Chapter II: Study of the Problem

Problem Statement

The problem that was addressed in this practicum was that most teachers at the writer's school were underutilizing school network capabilities in spite of district technology initiatives. The district provided the network infrastructure to connect all district schools to each other and to the Internet. It also provided funding for the school to select appropriate hardware and software. Further, it provided training as well as funding for training opportunities which included release time, stipends, and recertification credit. Still, many teachers at the writer's school were not using most of the network's resources in their day-to-day classroom activities.

Problem Description

The problem was manifested in a number of ways. Many teachers at the writer's school were having difficulty following the steps necessary to access network programs available to the different user groups (teacher, student) and switching from network programs to local drive programs. Many teachers at the writer's school were having difficulty using the various programs once they had been assisted with accessing those programs. Most teachers who did not have a home Internet account were not communicating electronically. Many teachers at the writer's school were not encouraging students to initiate projects that required them to use network programs in their classroom.

The majority of the school's teachers were using the school computer network only for quarterly mandated grade recording into OSIRIS, a DOS-based program which is being phased out; however, many needed help accessing OSIRIS on their classroom

computers before they could begin entering grades. Only three teachers had indicated that they have created web pages in the fall of 1997.

Problem Documentation

There was abundant evidence that the problem of under-utilization of the writer's school network existed. The writer prepared a questionnaire (see Appendix A) dealing with level of ease of use of the network and distributed it at the August 14, 1997, faculty meeting. Seventeen faculty members returned unsigned questionnaires either personally to the media center staff or anonymously to the media center mailbox; many teachers responded personally that they did not fill out the questionnaire because they had not used the network.

The completed surveys confirmed that the network was underutilized: 12 of 17 who returned the questionnaire had some trouble helping students with the student network programs; only 4 had involved a class in an Internet exchange project; 5 had used the Internet with class instruction; 7 had used the Internet with class planning; 7 would be willing to keep their team's portion of the school web site up-to-date if they knew how; and 10 felt there was a problem with communications within the school and between the school and community.

Since April 1997 a running log has been maintained in the media center of teacher requests from the following sources: telephone calls to the media center, student runners sent from class to the media center, notes from teachers put in the media center mail box, and personal visits from teachers to the media center to ask for help. The media center staff and the computer lab coordinator have all been instructed to record technology problems as the requests were received.

The teacher technology request-for-help log maintained in the media center confirmed that the network was underutilized: 60% of the requests dealt with teachers not logging in to the network before attempting to access network programs, 8% of the requests dealt with program-specific questions, 7% of the calls dealt with equipment peripherals not being properly plugged in, 10% of the requests dealt with mechanical printer problems, and 15% of the requests deal with actual network configuration problems that required the expertise of the network administrator.

Informal interviews with teachers by the writer confirmed that the network was underutilized. In casual conversations with teachers and the computer lab coordinator, the writer concluded that many teachers were not accessing the different levels of network programs without help because they did not understand the concept of logging in and out of user groups on the network. The data collection method was informal social contacts between the staff, the computer lab coordinator and the writer.

Through simply observing teachers in their classrooms as well as in the media center, the writer determined that most classroom teachers underutilized the network and that computers were not turned on in over half of the classrooms at any one time during the day. Sources for the information include random personal observations by the writer of classroom activity during school hours. The data collection method was informal personal observation by the writer while moving through the halls during school hours.

Causative Analysis

One possible cause of the problem of teachers underutilizing the school network and not participating in technology in-service training sessions was that many of those who wanted to learn to use the network programs had schedule conflicts. The writer

noted that many of the teachers at the writer's school were involved in various school committees and school activities that made additional demands on their time and present scheduling problems. The writer noted that most of the teachers at the writer's school also had personal and family commitments that presented scheduling problems for after-school sessions. The writer's investigation concerning the teachers' low attendance at technology in-service training sessions determined that scheduling and prioritizing time for uncompensated network training was a problem for many teachers.

Another possible cause of the problem of teachers underutilizing the school network was that many needed more incentives to invest personal time into mastering the range of network skills. The writer noted that many of the teachers at the writer's school would feel professionally compensated if they were given the opportunity to earn recertification or graduate credit for investing time in mastering the use of the school network. The writer also noted a stipend, release time, or the opportunity to take a computer home for the summer for investing time in mastering the use of the school network would be considered professional compensation. The result of the writer's investigation concerning the teachers' need for incentives was that offering some payback for teachers beyond the intrinsic satisfaction of higher level of skills acquisition was important.

Still another possible cause of the problem of teachers underutilizing the school network was that many teachers did not understand the logistics of how certain programs were made available to particular users on the network. The writer noted that even though most of the teachers had taken the technology applications course, they had not had adequate instruction in networking concepts. The writer further noted that many

teachers opted to miss class on the day when the network was covered in the previous technology applications course because many felt they already knew all they needed to know about using the network for grade input. The result of the writer's investigation concerning the teachers' background knowledge of the network was the writer's recognition that there were gaps in the teachers' technology training.

Yet another possible cause of the problem was that some teachers were not convinced that using the network had more value than what they were already doing. The writer noted that there were still some teachers at the writer's school who, for personal philosophical reasons, were not convinced that it was worth the effort to learn to use the network programs. The writer further noted that some teachers did not see practical reasons for using the network. The result of the writer's investigation concerning some teacher's non-interest in the network was that some teachers were not aware of some practical, useful applications of the network's capabilities.

A further possible cause of the problem was that some teachers on the technology committee who were the designated representatives and mentors for their teams were not themselves passing on the information or were not knowledgeable enough to offer help to their teammates. Beginning June, 1997, the writer began sending meeting announcements and other written communications with the technology committee solely via e-mail, but discovered that only two of the sixteen members responded regularly and five did not respond at all. The writer discovered that after meeting with the technology committee beginning school year 1997-1998, decisions and information brought out in these meetings were not conveyed to many of the individual team members that the technology committee members were representing. The writer's conclusions concerning

technology committee members was that most had not been able to fulfill their representative and mentoring functions.

An additional possible cause of the problem of teachers underutilizing the school network was that the media staff and guidance clerk had been too readily available to "come to the rescue" of teachers calling in a panic rather than holding the teachers responsible for their own learning. The writer and the guidance clerk noted that those teachers most dependent upon the writer and guidance clerk for assistance at grade reporting time had not attended the training sessions. The writer and the guidance clerk further noted that those teachers most dependent upon the writer and guidance clerk for assistance at grade reporting time expected the writer and guidance clerk to "come to their rescue" at a moment's notice, but were repeating the same questions and had not worked through the printed guide the media specialist had prepared. The writer and guidance clerk also observed, however, that when neither were available to "come to the rescue" of those teachers most dependent, those teachers found a way to enter their grades on their own.

A contributing possible cause of the problem of teachers underutilizing the school network was the past commitment level of administrative staff for their own technology training. The writer noted that none of the administrators had been involved in any of the technology applications courses at the school from June, 1996 - July, 1997, and thus they were unable to converse with teachers with the same level of commitment and knowledge about the applications. The writer also noted that though in-service training sessions had been arranged during teacher planning periods, during in-service hours and after-school for the faculty on various technology applications, attendance may have been poor

because it was not attended by or required by the administration. The conclusion of the writer's investigation concerning commitment level of administrative staff was that the school administrators had conveyed to the faculty that they did not consider technology training to be a high personal priority.

The problem of teachers underutilizing the school network was possibly compounded by the fact that all teachers had not had access to all functions of the network in their classrooms. The writer noted that some of the teachers did not have Internet access in their classrooms for two reasons. Internet service was not available at the writer's school until the spring of 1997. After Internet service was available in the school, many of the students did not sign and submit the district AUP (Acceptable Use Policy), a pre-requisite for granting classroom Internet access.

The writer noted further that some of the teachers did not have any computer access in their classroom in the 1996-1997 school year because they had not signed up for nor completed the school basic technology course which had been a pre-requisite for a receiving a classroom computer. The results of the writer's investigation concerning the teachers' access to technology was the writer's recognition that the school network and Internet access had been available to some teachers only through the media center during the 1996-1997 school year.

Another possible cause of the problem of teachers underutilizing the school network was the level of technical support for the new network. In re-examining the school's technology plan which was approved in April, 1996, the writer noted that the technology leaders recognized a need for a technology aide to be hired to assist with basic computer trouble-shooting; however, the decision was made not to fund the

position during the 1996-1997 school year. The writer noted that the need for a technology aide was also recognized by the guidance clerk, who received teacher requests for assistance with OSIRIS, and by the technology committee in the form of a March, 1997, proposal requesting the funding of a technology aide position. The result of the writer's investigation was a confirmation that the releasing of two school special aides for part-time technical support training for the 1997-1998 school year would free media and guidance staff to concentrate more on implementation strategies rather than on trouble-shooting and repairing equipment.

The cause of the problem of teachers underutilizing the school network programs Grade2 and Pinnacle, the district's new attendance or gradebook and attendance programs, was that training specifically for these programs had not yet been made available to the teachers. The writer noted that the teachers at the writer's school have not been offered training in Grade2 and Pinnacle. The writer noted that the writer herself had not received Grade2 training because it was offered to school technology leaders at the same time that Novell training was offered. The writer's conclusion was that Grade2 and Pinnacle training for teachers at the writer's school might need to be conducted by a person other than the writer.

Relationship of the Problem to the Literature

Topic areas the writer researched from the literature review included: school networks, school LAN's, school communications, communications, technology training, teacher training, in-service training, teacher computer literacy, community networks, intranets, network teacher training, computer literacy, educational technology, computer service in schools, and computer applications in schools.

In an experimental teacher training program at Dana College in Nebraska, TREK (Technology Research Exploration for Kids), it was observed that after an intense summer week training, the majority of teachers did not use the technology they learned when they returned to their classrooms in the fall (Kopp & Ferguson, 1996). Trained teachers did not use their new skills for a variety of reasons. They were afraid to try new technologies at their school. When a new school year started, they had forgotten what they had learned at the beginning of the summer. They were afraid that other teachers would consider them too experimental.

Siegel (1995, p. 44) found "not enough time, inadequate hands-on practice and insufficient follow-up" were problems with staff technology training. Siegel provides statistics that indicate a low percentage of district money is allocated for technology staff development training.

Furger (1996, p. 256) found in a survey of elementary teachers that even though 94% believe PCs can be "powerful tools for classroom learning," only 55% answered that they had "received enough training to feel comfortable with the technology." A number of causes are cited including lack of financial or leadership support, lack of time provided away from the classroom for training.

In Hodas's (1992, p. 1) study of schools' attempts to take advantage of the capabilities of new technologies available for them, he found overall failure, or at least marked under-utilization of the technology to affect and revolutionize "the day-to-day values and practices of teachers, administrators, and students." He found the root of the problem to be a philosophical values conflict between those of the established school

organization and those of the technology promoters who did not recognize such factors as teachers' fear of embarrassment in front of a classroom and of disruption of routine.

Teachers indicated that they would make better use of technology if they had more knowledge about how to use it (Office of Technology Assessment, 1995). Technology implementation involves more time and effort than had been expected and because teachers are teaching most of the school day, they do not have much time left for learning or practicing new skills.

Past research (McKenzie, 1993a, 1994) found that many teachers underutilized network technologies and failed to make the technology/curricular connection. McKenzie found a number of causes, such as inadequate ongoing support; lack of hands-on training at workshops; inflexible teacher mindset for switching from one computer platform to another, and controlling personalities or power-users hindering novice technology teacher receptiveness to learn.

Kussman, Dunn, Bagley, & Watnik (1996) pointed out that many people underutilizing technology felt that electronic communication is impersonal. They concluded that users had this attitude because the methods for introducing and training users often put more emphasis on the technical how's without enough emphasis on the why or when that users need to understand before moving to the how's.

Cuban (1986, p. 8) felt that some teachers resisted fully utilizing new technologies for its various functions because they perceive a role change from "student-teacher to student-machine in classroom orientation." Cuban found the cause for teacher resistance of the technology-forced role change of the teacher to be the fear of the possibility of an

accompanying change in the interpersonal relationships of teacher/mentor/adviser with student/learner.

Hope (1996) pointed out that technology had not reached its potential in most American schools. Hope found this was because many administrators did not want to impose technology upon resistant teachers and many teachers were not willing to change their teaching method without incentive or coercion.

Levin (1995) noted that effective network-based learning environments had been difficult to organize. He saw the problem as resulting from most of the efforts not having been guided by a "systematic conceptual framework."

Foster (1996) explained that the under-utilization of networks and technology in the business area was evidenced by the number of questions directed at the technical help desk that users could have answered themselves if they had referred to help screens or documentation they already have. He stated that many technology users expected training to provide all the answers and that many did not try to work through solutions because they had not committed to accepting responsibility for their own learning.

Chapter III: Anticipated Outcomes And Evaluation Instruments

Goals and Expectations

The goal of the practicum was to empower a cadre of representative mentor teachers to fully utilize the school network capabilities to engage in and help others engage in non-traditional classroom learning activities using the variety of resources made possible by district technology initiatives.

Expected Outcomes

The following outcomes were projected for this practicum:

Outcome 1. Computers will be turned on and ready for use in the majority of classrooms in the building during the day. An acceptable standard of performance is 10 of 12 of the teacher mentors' computers and 20 of 30 of the other classroom computers will be turned on and available for use.

Outcome 2. Teachers will be able to solve their own basic logging on and "how to get to and use" the network program questions. An acceptable standard of performance will be less than 10% of teacher requests will be basic network and software "how to" information.

Outcome 3. Twelve of 12 team representatives/teacher mentors will be skilled enough at accessing the teacher network programs to ensure that their team members are also able to access those programs. The standard of performance that is acceptable will be mastery.

Outcome 4. Twelve of 12 teacher mentors will be experienced enough at accessing and using the student programs to help their students access and use the student network programs. The standard of performance that is acceptable will be mastery.

Outcome 5. Twelve of 12 teacher mentors will have involved one of their classes in an Internet exchange project. The standard of performance that is acceptable will be mastery.

Outcome 6. Twelve of 12 teacher mentors will have used the Internet or a network program with direct class instruction. The standard of performance that is acceptable will be mastery.

Outcome 7. Twelve of 12 teacher mentors will have used the Internet or a network program with class planning. The standard of performance that is acceptable will be mastery.

Outcome 8. At least 10 of 12 teacher mentors will create and then update their teams' web pages to publish student work and team news at least bi-monthly for an eight-month period. The acceptable performance will be the submission to the writer of a web page that can be uploaded to the school's site "as is" and which includes both student work and team news.

Outcome 9. Twelve of 12 teacher mentors will become proficient at using e-mail, the web message board, the class listserv, the class chat room, and team web pages to improve school communications. The standard of performance that is acceptable will be mastery.

Outcome 10. At least 10 of 12 teacher mentors will begin using Grade2 and Pinnacle, the district's new attendance or gradebook and attendance programs. An acceptable standard of performance is the ability to use both programs unassisted by the end of the eight-month period.

Measurement of Outcomes

Outcome 1. The measurement of the outcome of 10 of 12 teacher mentors' computers and 20 of 30 other classroom computers being turned on and ready for use was to be determined by the writer's observation and tally during a random walk down the school hallway during a "typical" school day. This outcome that was measured by observation.

Outcome 2. The measurement of the outcome of less than 10% of teacher requests concerning basic network and software "how to" information was to be determined by the tally of entries in the "request for help" log which would indicate that teacher technology problems were with hardware or software failures, not "how to get to and use" network programs.

Outcome 3. The measurement of the outcome of teacher mastery at accessing teacher network programs was to be in the form of documentation that the teacher mentors record and subsequently e-mailed to the writer and/or included as a topic for the web discussion board. Either the teachers could access the teacher programs or they could not.

Outcome 4. The measurement of the outcome of teacher mastery at accessing and using basic features of the student network programs was to be in the form of documentation that the teacher mentors recorded and subsequently e-mailed to the writer and/or included as a topic for the web discussion board. Either the teachers could access and use the basic features of the student network programs or they could not.

Outcome 5. The measurement of the outcome of participation in a class Internet exchange project was to be in the form of documentation that the teacher mentors

recorded and subsequently e-mailed to the writer and/or included as a topic for the web discussion board. Either the teachers had involved a class in an Internet exchange project, or they had not.

Outcome 6. The measurement of the outcome of teacher use of the Internet or network programs with direct class instruction was to be in the form of documentation that the teacher mentors recorded and subsequently e-mailed to the writer and/or included as a topic for the web discussion board. Either the teachers had used the Internet or a network program with direct class instruction, or they had not.

Outcome 7. The measurement of the outcome of teacher mentors using the Internet or network programs with class planning was to be in the form of documentation that the teacher mentors record and subsequently e-mail to the writer and/or include as a topic for the web discussion board as a requirement of a proposed web-based technology course. Either the teachers had used the Internet or a network program with class planning, or they had not.

Outcome 8. The measurement of the outcome of 10 of 12 teacher mentors creating and updating their teams' web pages was to be determined by the number of acceptable submissions that the writer received from each team representative during the eight-month period.

Outcome 9. The measurement of the outcome of teacher mentors becoming proficient at using e-mail, the web message board, and team web pages to improve school communications was to be determined by whether or not the team representatives actually performed these tasks. Either the teachers communicated via web board

discussions, web pages, and via e-mail, or they did not. The writer recorded each incidence of participation on a checklist template.

Outcome 10. The measurement of the outcome of teacher mentors using Grade2 and Pinnacle was to be determined by their submission rate as monitored by the attendance and guidance clerks and reported to the writer.

Chapter IV: Solution Strategy

Discussion and Evaluation of Solutions

Topic areas the writer researched from the literature review included the following: teaching in-services, in-service training, teacher training, teachers (under "computer" category), train the trainer, distance education, school networks, school LAN's, school WAN's, school communications, communications, technology training, teacher computer literacy, community networks, intranets, network teacher training, computer literacy, educational technology, computer service in schools, computer applications in schools, and web-based instruction. After conducting research using those identified topic areas, the writer gleaned possible solutions from the literature for empowering teachers to maximize the school's networking capabilities.

Developing a technology plan which outlined the school's shared vision and technology goals for the school's staff-development methods was cited in a number of sources as a first step (Golden, 1997; McKenzie, 1991; Office of Technology Assessment Report, 1995). The writer's school did develop a technology plan in 1996; however the staff development component was generalized and was not followed closely. The writer believed that a revised staff development component of the school technology plan, which would include a shared vision by the staff, would be a beginning solution.

Because research has not determined that any one strategy is more effective than another for teacher technology training, using multiple presentation styles in combination was a goal (Ingwerson, 1996; Kussman, et al., 1996; Levin, Rogers, Waugh, & Smith, 1989; Office of Technology Assessment Report, 1995). Because the writer's school has 100 faculty and staff members with diverse personalities and learning styles, no one

training method would be most effective for everyone. The writer believed that incorporating a variety of teacher training strategies was necessary.

Tying school technology implementation to incremental goals and then simplifying the technology configuration leads to success (Hodas, 1992; Hope, 1996; McKenzie, 1991). The writer believed this to be a valid suggestion because training in the past had tried to accomplish too many things at once and acquiring access to network programs has not been "intuitive" for users. The writer felt that technology training for teachers should be divided into small components that teachers would master one-at-a-time before they moved on to more complex tasks.

Providing teachers with incentives and practical reasons for using the technology was considered essential (Armstrong, 1996; Kussman, et al., 1996; Office of Technology Assessment Report, 1995). The writer felt that network training for teachers should include specific ideas as to how they could use their skills in their classroom as well as rewards such as recertification credit, summer use of computers, stipends, time off, etc. The writer believed that the school should pay for technology training for teachers in the school and allow the teachers to earn recertification or graduate credit, as well as summer use of computers.

Finding something exciting to demonstrate what technology would allow them to do that they could not do otherwise helps to grab the interest of reluctant teachers (Levin, 1995; McKenzie, 1993a). The writer concluded that many teachers were not aware of what the school network could enable them to do and that they would be eager to learn once they saw something that they were truly interested in demonstrated via the network.

The writer felt that a portion of a beginning teacher technology training session allow for exploring topics of interest of several skeptics in the class.

Providing hands-on practice along with face-to-face instruction as either part of the training or as follow-up is important (Amini, 1995; Harris, 1994; Kopp & Ferguson, 1996; Office of Technology Assessment Report, 1995). The writer believed that a problem with Internet training had been that there had not been enough networked computers in one room for teachers to access the network themselves. The writer felt that network training classes should be limited to no more than twice the number of network connections in the training room, and ideally no more than the number of network connections in that room.

Ensuring that teachers had both time to experiment as well as access to the technology away from the training session was essential if the teachers are truly expected to implement their training (Harris, 1994 and Hope, 1996; Ingwerson, 1996). As of October 1997, every classroom teacher not in a mobile unit had at last one networked computer in his classroom available for his use at any time. The writer determined that lack of access to the technology should not be a problem at the school.

Forming collaborative teams within a technology training session or program for users to learn and work on projects together was a recommended strategy (Amini, 1995; Hope, 1996; McKenzie, 1991). The writer had determined that within a face-to-face and hands-on training session at the writer's school, team formation would be essential to share the networked computers. The writer felt that this forced team collaboration would be useful for teachers to work out solutions together and to help each other.

Using the "train-the-trainer" mentoring model was recommended as a cost-effective and non-threatening method for teachers to learn technological skills from each other (Armstrong, 1996; Ingwerson, 1996; McKenzie, 1993b). The mentoring model was suggested in the writer's school's original technology plan; however, it was neither emphasized to the staff, nor was its implementation followed-up by the technology coordinator or administrative staff. The writer believed that the initial teachers involved in network training should be representatives from each team who would in turn share their training with their teammates.

Requiring teachers to use technology to communicate as part of a learning strategy is recommended (Amini, 1995; Dyrli & Kinnaman, 1994; Hope, 1996; Kussman, et al., 1996; Levin, 1995; Partee, 1996). The writer believed that requiring teachers to practice newly acquired technology of communicating with each other should result in a high retention and application rate for the teachers at the school. The writer determined that teacher network training must include application of technology communication between teacher and trainer as well as between participants in the training program itself.

Involving technology learners in intensive extended university course work is preferable to afternoon workshops or informal organized on-the-job training because of the complexity and range of technology skills that need to be acquired for mastery (Maglitta, 1997). The writer concluded that teachers at the school would benefit from the involved training that that would be expected of a university-approved graduate level course. The writer felt that offering a college credit technology course to teachers at the school should be part of the solution strategy.

Armstrong (1996), Brandt (1997), Kussman, et al. (1996), Maglitta (1997), Partee (1996), Scigliano, Levin & Horne (1996) presented specific strategies and advantages for using web-based instruction as a course or training delivery method: it requires the teacher-students to use new technology skills to participate; it allows students to alternate between applying what they are learning during the course and return back online any time; the classroom never closes.

The writer believes the elements described in the following paragraphs are essential for basic technological proficiency among teachers at the school and that they should be incorporated into a course for those teachers.

Within the flexibility of multiple presentation formats, providing structure is essential to holding innovative training together, particularly within a course syllabus (Kearsley & Lynch, 1996). The writer considered it to be sound educational practice, as well as important, for an innovative instructional delivery method, that the participants in the class have a well-structured syllabus that they could refer to as a guideline of goals, expectations and procedures for successful completion of the course. The writer therefore felt a well-organized and explicit syllabus for a networking applications course for teachers should be designed.

Helping teachers to join or create virtual communities with others involved in a common pursuit, building on each other's ideas, avoiding duplication of effort were intended strategies for optimizing the school network (Brandt, 1997; Dede; 1997; Kussman, et al., 1996; Levin, 1995; McKenzie, 1994; Office of Technology Assessment Report, 1995; Partee, 1996; Wulf, 1996;). The writer viewed the creation of virtual communities as a paradigm shift for many teachers at the writer's school who were

inexperienced with online communication, but who would find the concept exciting once they began exchanging thoughts and work with teachers they had never met. The writer believed that joining knowledge webs of people outside the school should be one of the expectations of the network training.

Building training support, for "just-in-time training" into a technology training plan should include: interactivity between the learners and teacher, on-site staff assistance, assistance that can be accessed on-line, as well as paper documentation (Brandt,1997; Levin, 1995; Maglitta, 1997; Office of Technology Assessment Report, 1995). Because teachers at the writer's work setting had come to expect immediate help with their technology problems, it was important that the training include paper documentation and instructions for accessing on-line help, e-mail addresses for the teachers to seek help from the trainer and each other, and follow-up sessions to address common concerns. The writer believed that the teacher network training program for the school should provide the teachers with clear paper documentation, a review on accessing help-screens, provision for interactivity between trainer and teachers, as well as at least one planned follow-up session.

The writer was drawn to the concept of finding teachers' original idealism in choosing the teaching profession to entice them into wanting to learn to use newer technology (Cuban, 1986; Hodas, 1992; McKenzie, 1994). The writer viewed the school faculty as being talented and creative educators who had given much time and energy to the profession. The writer believed that tapping this inner strength with an idealistic philosophical approach had immediate application to the school setting. The writer reflected that the school technology plan mentoring system was not as effective as hoped

possibly because the original mentors were not directed or committed to giving the amount of time and energy required for establishing a core group (Science Applications International Corp., 1997). The writer believed that the core group fell apart at the writer's school because there were no regular meetings or classes to provide the skills training the teachers were to share with their team members, there was not strong administrative backing, and there was no incentive. Additionally, the writer felt the core group idea could still have merit if it was rekindled as course-based with a component that required the participants to work with their team members, if it was tied to an incentive, if the members were committed, and if it had administrative backing.

The writer was drawn to the concept of encouraging teachers to find and develop their own favorite technological niche to make the task of acquiring or refining technological skills a rewarding and effective long-term school-wide training strategy (Office Of Technology Assessment Report, 1995). The writer believed that if different faculty members developed a special expertise in an area that they each particularly enjoyed, they would enjoy exchanging their enthusiasm and skills with others skilled in different areas. The writer believed that this concept should be developed within the school.

The writer recognized that the teachers at the school might not be utilizing the network's full capabilities because they were more attuned to the concept of using information networks to access information rather than to also interact with information and individuals (Levin, 1995). The writer believed that teachers at the school needed to know that their fellow teachers and students at school were communicating and exchanging information with scientists and other students in other parts of the world.

The writer believed that global communications had to be part of a network training program in which at least the core group of teachers participated.

The writer recognized that a teacher technology training program with a web-based framework would free teachers from needing to be in the same place at the same time for most of the training or class discussion (Kussman, et al., 1996). The writer felt also that some teachers at the school would be interested in a web-based course delivery system for the sheer experience of taking a technology course in that format.

Among the suggestions for multiple presentation techniques were the web-based delivery in the form of study guide and syllabus with links to other sites, lectures, tutorials, web discussion boards, and video conferencing, as well as electronic mail, listservs, face-to-face and hands-on lab sessions. The writer recognized that there could be disadvantages to the more independent study type approach to using the Internet, such as reliance upon student initiative and unreliable Internet links (Wulf, 1996).

The writer believed that because of the independent nature of the faculty, a clear-cut structure would need to be provided for the sessions or course requirements that were not face-to-face. The writer believed that a closely structured course outline with a detailed timeline of expectations and requirements for completion would keep everyone on track to meet the course goals within deadlines.

The writer was reminded that school technology must be funded every year -- not only for new equipment and software, but also for maintenance, preventative maintenance, supplies, and for training (Office of Technology Assessment Report, 1995). The writer believed it was imperative that the need for funding technology maintenance, as well as preventative maintenance skills be part of the information and skills training

that was conveyed in the teacher technology training. The writer determined to incorporate technology funding needs in network training planning.

Description of Selected Solutions

The writer decided to offer network training -- accessing data, using data, and communicating data -- to a group of teachers at the school who would be expected to share their training with fellow teachers in their team or in their department. The training would include a variety of delivery and instructional methods but would be centered on a web-based model in which place and time of delivery for most of the instruction would not be obstacles to teachers' participation.

The best time frame for optimal faculty participation in the formal course, the writer concluded, would be January through mid-June (see Appendix E). It would include two all-day Saturday class sessions at the beginning of the course so that participants could early-on acquire and practice the necessary skills to participate in the non-traditional classes, as well as to complete their assignments (see Appendix F). One final face-to-face session would be planned in which all class participants would present a final project to their classmates (see Appendix G). Class participants would receive instruction in and practice using such equipment as scanner, digital camera, and video projector; as well as opportunity to acquire and use an e-mail address; use a web discussion board; use the chat program that was chosen for the course; use the various school network database programs; and create a basic HTML document (see Appendices K, L, M, N, O). Class participants would receive an overview of Internet search engines to locate class resources and Internet exchange projects.

Communication via e-mail, discussion board or listserv, and chat room would constitute additional face-to-face class time to meet the university's attendance requirements for course credit (see Appendix D). Class participants would be required to create their team or department's portion of the web site and submit monthly up-dates (see Appendices K and L). They would be required to involve one of the classes they teach in an Internet exchange project and report the progress to their network classmates.

It was anticipated that class participants would continue communicating electronically, sharing their discoveries and ideas with each other throughout the summer, and responding to the writer's posting of new URL's discovered and added to update the school web's curricular links page. As an incentive, class participants completing the requirements of the course would receive either recertification credit or graduate credit after grades were turned in mid-June. There was to be no external incentive offered to the teachers to continue using the listserv and discussion board once the grades had been turned in. However, the writer hoped to bait their interest during the summer break by sending weekly listserv announcements of updates that had been made to the school web site.

Class participants would have to master basic skills in using the school network in order to work on and complete assignments for the course (see Appendices H, I, and J). They would be required to complete a project using the school network resources to enhance and integrate with their own classroom teaching/facilitating activities.

The writer intended that the class participants would be the technology committee members, or at least representative of the various teams and departments within the school. The intention was that the class participants would strengthen their technology

skills as a result of working through course requirements and would thereby be better able to mentor and share their skills with other teachers in their teams or in their departments. The writer also planned to invite the three school administrators to enroll in the technology course.

The writer planned to ensure that one computer in each of the school's networked classrooms was properly configured with all components installed to access the school LAN programs and the Internet. The writer intended to continue to maintain a log of technician calls answered by media staff to document and thereby substantiate the need for technical support staff in order to finally institute at least one full-time permanent technical aide position.

The writer planned to coordinate Grade2/ Pinnacle training between the class participants and the school's Grade2/ Pinnacle trainers. It was expected that there would be sufficient interest in the course for representative participation because of the delivery method, the earned credit opportunities, the skills development opportunities, the mentoring model, and administrative backing to accomplish projected outcomes.

Because of the required network activity of the course, the writer expected that class participants would become proficient and confident enough to want to use their classroom computers daily for teaching, research, communication, and professional development needs. It was expected to receive very few pleas for help from teachers that derived from logging in procedures because of the required network activity of the course. Furthermore, because of the required network activity of the course, the writer expected that all of the class participants would be able to help their students use network programs.

The course would require all participants to involve one of the classes they taught in an Internet exchange project. Because of the required Internet searching of the course, the writer expected that all class participants would find information and materials they would use with class instruction and class planning.

The course would require all participants to create a team or department web page and to update it at least bi-monthly. It also would require all participants to communicate via e-mail, web discussion board and web pages. Additionally, it would require all participants to begin using Grade2/Pinnacle, the school district's new attendance and gradebook program.

Report of Action Taken

In November of 1997, the writer received approval from both the school principal and district staff development office to present this new course, "Optimizing the School Network," to teachers at the school, beginning in January, 1998. Written permission was received from a nearby university to offer the course for graduate credit. The writer then designed, coordinated and served as principal instructor of the course. As media specialist, network administrator, school technology committee chairman, school web page coordinator, Pinnacle/Grade2 support, the writer was in a position to implement all facets of the program.

Before the practicum implementation date, the writer began the process of setting the stage for the practicum. This included preparing a course syllabus (see Appendix B) acceptable to both the writer's school district and the nearby public university through which the course was to be offered. The syllabus went through several revisions

Recommendations

1. Acquire more web-based (subscription) resources and spend fewer school technology dollars on databases (CD-ROM or server-loaded) that aren't kept current. Use the school network for school-specific intranet-type resources.

2. Redesign the school network course to make the following improvements:

a. More closely follow an instructional design model in providing continuous feedback and evaluation, and in addressing the users' expectations of skills to acquire and pre-requisite skills to bring to the course.

b. Ensure that all students have a clear understanding of the nature of a web-based instruction course and the responsibilities of students for their own learning of a course of this nature. Spend more time clarifying assignment expectations and deadlines and the preferred means of communicating with the instructor.

c. Reduce the number of individual assignments but build in more options for in-depth group assignments. Make the final project the Internet Exchange project presentation and be sure it is fully developed.

d. Schedule another face-to-face skills building session and include more time for discussions, for exploring online tutorials, and for reporting at the end of the class what was discovered during the explorations of tutorials.

e. Change the nature of the web page assignments so that students can use web editors and learn to upload their web pages to a web server, rather than turning in an HTML document for the instructor to upload.

3. Arrange for a systems thinking, organizational learning seminar or retreat for the school faculty and administrators in which consensus is reached on a shared vision for the school's direction and level of commitment with technology integration and support.

4. Develop a password-protected web discussion forum for the whole school to use to maintain open lines of discussion on technology issues as they arise.

5. Educate the school administration and the district decision-makers on the various technology support roles that must be funded as new and separate, not add-on duties, to keep classroom technology use feasible and functioning.

Dissemination

The writer has been asked to pursue the opportunity to present, or possibly co-present with one of the teachers in the "Optimizing the School Network" class at a national school library conference in October of 1999. As part of a joint presentation, the writer recently presented experiences with this course with two other middle school technology coordinators who presented their staff development experiences at the state EdTech98 conference. Other upcoming educational technology conferences in the state which are potential venues for disseminating information about the practicum project include the spring state school librarian's conference, which the writer's district will be hosting, and another spring state educational technology conference which focuses on the K-12 environment.

As the writer's district began in the spring of 1998 mapping out teacher training plans for the 1998-1999 school year, the district staff development coordinator has asked the writer to alter the course taught in the practicum so it could be delivered to other

teachers district-wide. The writer is currently revising the course now and has committed to teaching it in the spring of 1999 to any interested teachers in the district.

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APPENDIX A

GENERAL FACULTY QUESTIONNAIRE,

AUGUST 1997

General Faculty Questionnaire, August 1997
Network Communications

Use a scale of 1-10, with 1 being strongly agree, and 10 being strongly disagree?

1 2 3 4 5 6 7 8 9 10
agree disagree

____ I am able to easily log in to the school network to access the teacher programs.

____ I am able to use most features of all of the teacher programs on the network.

____ I am able to use most features of at least two teacher programs on the network.

____ I usually need assistance logging on to the teacher portion of the network.

____ I would like some instruction with using the district's new grading and attendance program running on our network.

____ I am able to log out of the teacher portion of the network and then log in to the student portion of the network.

____ I am able to use most features of all of the students' programs on the network.

____ I am able to use most features of at least half of the student programs on the network.

____ I am able to use some features of three or more programs on the network.

____ I am uncomfortable using the network programs.

____ I am able to help students log on to the network and access student programs.

____ I have used the Internet with my class planning.

____ I have used the Internet with my class instruction.

____ I have involved at least one class in an Internet exchange project.

____ I would like to involve my classes in Internet exchange projects, but am not sure how to go about it.

____ I use the Internet at home for news information.

____ I feel comfortable searching on the Internet.

____ I feel comfortable directing my students to search on the Internet.

____ I would like some instruction on Internet search strategies.

I think there is a problem with communications in our school:
____ between the district and our school
____ among our school staff
____ between our school and the community

____ I would use our school web page if it were kept up to date and had information I could use.

____ I have constructed a web page.

____I would be willing to help keep my team's portion of the school web site up-to-date, if I knew how to create web pages.

____ I would like for our school to use the network to communicate internally.

____ I would like for our school to use the network to communicate with the community.

____ I am familiar with web message boards.

____ I would like our school to use web message boards.

I would be interested in taking a course at our school to:
____ learn the basics of using our school network and programs on it
____ use the district's new grading program, Grade2
____ create web pages for sharing information and student work
____ set up a classroom Internet exchange project
____ replace some meetings with online discussions
____ practice using e-mail to communicate with colleagues, parents, students, instructor.

I would be interested in taking this as a
____ recertification course (free)
____ graduate credit course ($50-$60)
____ non-credit series of seminars.

____ I would be interested in taking this as a web-based course:
There would be several intensive scheduled classes in the beginning weeks for basic skills instructions. Course requirements and tutorials would be posted on a web site. Assignments and questions would be e-mailed to the instructor. The instructor would be available one afternoon each week for
additional help.

___ I would be interested in taking this as a traditional weekly or all-day monthly Saturday-scheduled class.

___ I am not interested in any further training.

Other comments:

_____

_____

APPENDIX B

SYLLABUS FOR

"OPTIMIZING THE SCHOOL NETWORK'

Syllabus for Optimizing the School Network

[for Accessing Information, Improving School Communications, and Interacting with the Global Community]

I. Descriptive Information:

A. Course title:
Optimizing the school network for accessing information, improving school communications and interacting with the global community.

B. Catalog description:
Introductory training course for faculty and staff to apply school networking technical skills and knowledge base for building learning communities and for mentoring their colleagues.

C. Course credit:
3 graduate hours

D. Prerequisites:
1. Working knowledge of Windows 95.
2. Working knowledge of Microsoft Office Suite '97.
3. Willingness to share training as mentors for team or department members.
4. Daily access to a networked classroom and/or home Internet access.

E. Intended Audience:
Faculty and staff at McCracken Middle School, Hilton Head, SC.

F. Instructor (s):
Laura Richardson, Principal Instructor
(Possible guest trainer/s)

II. Statement of course goals and objectives:

A. Goals:

1. To clarify networking principles so that teachers have a basic working knowledge of the school LAN's capabilities.
2. To introduce teachers to alternative means of communications.
3. To form a group of networking mentors and e-mail communicators who will continue participating in dialogue with global community after the requirements of the course have been met.

B.Objectives:

By the end of the course, the student will be able to:

1. Explain the procedures for logging in and out of the network as Teacher, as Student, as Internet User and determine if a computer is physically communicating with the network.
2. Access all school network programs and the Internet.
3. Use the school network programs and the Internet with class planning and instruction.
3. Send, receive and respond to e-mail.
4. Access and participate in discussions on the class web discussion board, class listserv, and class designated chat room.
5. Create a web page.
6. Use the district's new gradebook and attendance programs.
7. Assist team or department members with networking questions.

III. Required texts and readings:

- Lemay, Laura. Teach yourself web publishing with HTML 4 in a week. Indianapolis: Sams.net (1997).
- Grade2 Basic Training Workbook (will be provided)
- EduPage (listserv)
- ASCD Newsletter (listserv)
- The McCracken Middle School Web site / Teacher Resources link
  - http://www.hhisland.com/learning/mcc_ms/mms.htm
- The following web construction sites:
  - http://sln.fi.edu/primer/newprimer/
  - http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimer.html
  - http://web66.coled.umn.edu/Cookbook/Win95/HTML/MinutePrimer.html
  - http://www.coedu.usf.edu/inst_tech/publications/html/

IV. Academic course requirements

1. Create a web page for your team, and update it monthly.
2. Locate and participate in a class Internet exchange project.
3. Choose one topic related to the area that you teach:
   a. Use every school network program and the Internet as a source for information.
   b. Create a PowerPoint or web page presentation on applying the information found that you will use with your teaching.
   c. Create a bibliography of sources to turn in and to share with other teachers.
4. Subscribe to the listserv EduPage and ASCD.

5. At least monthly react to EduPage, ASCD, and any other articles you are reading on the web discussion board created for this class; respond to classmates' postings on the board.
6. Participate in at least three scheduled virtual classes (password-protected chat rooms).
7. Keep a log of technology help you have provided your team or department members.
8. Email to the instructor at least monthly a progress report of your work, including problems encountered and problems solved.
9. Use Grade2 and Pinnacle to enter attendance and set up a grade book for each class taught at least for the final grading quarter.

V. Administrative course requirements:

1. Students will be expected to attend each Saturday session and one afternoon session mid-May. If a student must miss session, he will be required to get a classmate to share notes and training and to complete an additional assignment that he and the instructor will agree upon.
2. Assignments are due on a monthly basis, with one major project due mid-May.
3. Physical class attendance will be concentrated in the beginning weeks of the course so that students can acquire the skills to proceed with their projects, their e-mail, their web chats, their web pages and work on their own.
4. Virtual classes will continue through mid-June.
5. Chat room classes, e-mail communication, web discussion board participation will constitute class time.

VI. Evaluation and grading including the weight of each designated course requirement listed above.

- Team web page construction and updates-- 25%
- Topical presentation incorporating all network programs and Internet -- 20%
- E-mail to instructor -- 10%
- Discussion board participation and preparation -- 10%
- Netchat participation and preparation -- 10%
- Internet exchange project -- 10%
- Log of help to fellow teachers -- 10%
- Grade 2/Pinnacle participation -- 5%

Assignments will be given a letter grade of A, B+, C, or F with corresponding numerical values of 4, 3.5, 3, 2, or 0.
A grade of "A" will indicate that the student will have completed all of the requirements in and that the level of the work was truly superior.
A grade of "B" will indicate that the student will have completed all the requirements.
A grade of "C" will indicate that 70% of the requirements have been met.
A grade of "F" will indicate unsatisfactory work.

VII. Major topics of the course to be covered in Saturday sessions:

A. Overview of school network
   1. Overview of school network capabilities and design
   2. Overview of school network programs -- their function and applications

B. Overview of Internet
   1. Copyright and AUP concerns
   2. World Wide Web
      a. Search engines -- finding resources
      b. School web pages
      c. Downloading pictures and programs
   3. E-mail
      a. Sign up for e-mail account with Hotmail or Rocketmail
      b. Use new account to send message
      c. Sign up for EduPage and ASCD Newsletter
   4. Finding Internet Exchange projects

C. Equipment
   1. Scanner
   2. Digital camera
   3. Video Projector

D. Web Pages
   1. Creating a simple HTML document
   2. Principles of good web design
   3. Find help
   2. Downloading programs, pictures

E. Assisting fellow teachers / keeping help log

F. Accessing school message board
   1. Posting a comment.
   2. Responding to others' postings.

G. Accessing school web chat room

H. Review of Grade2 and Pinnacle
   1. Setting up a Grade2 gradebook
   2. Setting up a Pinnacle attendance sheet

VIII. Mode of instruction:

A. Face-to-face class sessions:
   1. Two all-day Saturday sessions (8:00a.m.- 4:00p.m.)
   2. One afternoon session (2:30 - 5:30 p.m.)

B. Virtual classes to include a minimum of 28 hours' engagement in:
   1. Web board discussions
   2 Chat room discussions
   3. Listserv discussions
   4. E-mail exchanges

APPENDIX C

GRADING TEMPLATE

GRADING TEMPLATE

% of Grade	GRADING TEMPLATE						
25	**Team web page and updates**						
		Deadline	***Received***	***Score***		**Score**
		2/25				
		3/25				
		4/27				
10	**Help Log**		(4 teacher helps per month)			
		Deadline	***Received***	***Score***		
		3/4				
		4/1				
		5/12				
10	**Discussion board participation and preparation**					
		Deadline	S/U			
		2/4				
		2/11				
		3/4				
		3/18				
		4/1				
		4/29				
10	**Netchat participation and preparation** (4 of 5 chats)					
		Date	S/U			
		1/28				
		2/18				
		3/11				
		4/7				
		5/12				
10	**Monthly E-Mail Progress Report -10%**					
			Received	S /U		
		Feb				
		March				
		April				
		May				
5	**Grade2/Pinnacle Participation**					
20	**Final Project**					
		MidPoint Report	3/15			
		Presentation	5/24			
		Use of Sources				
		Bibliography				
10	**Internet exchange project**					
		MidPoint Report		***Final Report***		
		Deadline	***Received***	***Deadline***	***Completed***	
		3/15		5/24		
100						

"A" completed all requirements and level of work was truly superior.				
"B" completed all the requirements.				
"C" 70% of the requirements have been met.				
"F" less than 60% of the requirements have been met				

APPENDIX D

HANDOUT:

CLASS COMMUNICATIONS

Class Communications

E-Mail to Instructor:

laurar@hargray.com
or
lilypad2@hotmail.com
Put in subject line:
Your name
Assignment topic

MMS URL:

If you forget URL, remember: "hhisland.com"

- to "schools"
- to "McCracken"
- to "Teacher Resources"
- to "Optimizing the School Network"
- (It's a good idea to bookmark that site)

Discussion Board

Web Site
ID: mmsclass
Password: bcsd2mms

Listserv:

E-Mail addresses of classmates: will be sent after 1/24/98 class

* Tuesday afternoon "office hours" in media center.

APPENDIX E

HANDOUT:

TIMELINE OF ASSIGNMENTS

TIMELINE OF ASSIGNMENTS

	Ongoing:	
	* Read articles * Discussion Board * Grade2/Pinnacle * Web Page revisions * Log of help to teachers	* Internet Exchange Project * E-mail to instructor * Listserv Discussions * Work on Final Project
24-Jan	Saturday class	See Agenda (8:00-4:00)
28-Jan	Chat Session-1 (2:30; 5:30)	Sign on and respond to some aspect of 1-24-98 session
4-Feb	Discussion Board-1	React to an article (1) in Edupage, ASCD, etc.
		LR to clarify issues from1-24-98 session
7-Feb	Saturday class	See Agenda (8:00-4:00)
11-Feb	Discussion Board-2	Describe progress/problems with Grade2/Pinnacle
18-Feb	Chat Session-2 (2:30; 5:30)	Provide URL & describe how it can be used in classroom
		Discuss progress & problems with web page development
25-Feb	Web Page-1	E-mail updated team web page
4-Mar	Discussion Board-3	React to an article (2) in Edupage, ASCD, etc
	Help Log-1	E-Mail team technology help log
11-Mar	Chat Session-3 (2:30; 5:30)	Respond to web posting policies URL's
		Describe your classroom copyright and AUP practices
18-Mar	Discussion Board-4	Describe your Internet exchange project
		Describe plans/ work on your final project
25-Mar	Web Page-2	E-mail updated team web page
1-Apr	Discussion Board-5	React to an article (3) in Edupage, ASCD, etc.
	Help Log-2	E-Mail team technology help log
8-Apr	Chat Session-4 (2:30; 5:30)	Provide URL & describe how it can be used in classroom
15-Apr	Spring Break	Work on final projects
22-Apr	Web Page-3	E-mail updated team web page
29-Apr	Discussion Board-6	React to an article (4) in Edupage, ASCD, etc.
6-May	Chat Session-5 (2:30; 5:30)	Provide URL & describe how it can be used in classroom
	Help Log-3	E-Mail team technology help log
13-May	Web Page-4	E-mail updated team web page
20-May	Afternoon Class	Present final projects
27-May	Discussion Board-7	Students post comments about class
		E-Mail Internet Exchange Project summary
2-Jun	Discussion Board-8	Students post technology plans for summer, 98-99
9-Jun	Chat/Discussion Board	LR submits class grades
6/16/97	Discussion Board	
6/23/97	Discussion Board	
30-Jun	Chat/Discussion Board	Update of Math/Science URL's on school web page
7-Jul	Chat/Discussion Board	Update of Language Arts/Literature URL's on school web
14-Jul	Chat/Discussion Board	Update of ESL/Multicultural URL's on school web
21-Jul	Chat/Discussion Board	Update of social studies URL's on school web

28-Jul	Chat/Discussion Board	Update of music/art URL's on school web
4-Aug	Chat/Discussion Board	Update of administrative/education URL's on school web
11-Aug	Chat/Discussion Board	Update of technology URL's on school web
18-Aug	Submit revised Web Page	Teachers submit new team web pages

APPENDIX F

HANDOUT:

SATURDAY AGENDAS

Saturday Agendas

		24-Jan-98	
		lst Saturday Class (8:00-4:00)	
0.25	.	Overview of Course Structure:	
		"office hours" Tuesday afternoons	
		graduate course -- graduate level requirements	
		Class time -- discussion board, chatroom classes, e-mail to instructor	
		Course description on web and help files on web	
0.25	0.5	Overview of school network	
0.25	0.75	Overview of networking principles	
0.5	1.25	Internet review & file management - searching	
0.5	1.75	Set up Hotmail and Rocketmail -- send message to classmate	
0.5	2.25	Using listserv; Subscribe to ASCD and Edupage and MS stuff-- then do it	
0,25	2.5	**Break**	
0.25	2.75	The MMS web page: explore / finding web instructions	
0.25	3	Find Internet exchange projects: URL's to explore	
0.5	3.5	How to use discussion board - demo (half-hour)	
1	4.5	**Lunch**	
1	5.5	how to download chatroom & use it	
0.25	5.75	**Break**	
0.5	6.25	Grade2/ Attendance keeping review	
0.25	6.5	Review: questions	
		Work on idea for Research project; read articles;	
		Use scanner (Group of 4)	
1.5	8	Use Digital Camera - group of 4	
		7-Feb-98	
		2nd Saturday Class (8:00-4:00)	
0.25	0.25	Review/ questions	
0.25	0.5	Principles of good web design	
0.5	1	Copyright considerations - downloading pictures	
0.25	2.25	**Break**	
0.75	1.25	HTML tutorial	
1	2	basic HTML - first team page	
1	3.25	**Lunch**	
1.25	4.5	Design page, embellish page; e-mail to instructor	
0.25	4.75	**Break**	
0.5	5.25	HTML function of Word, Excel,	
		Use Digital Camera - group of 4	
		Use Scanner - group of 4	
1.5	6.75	Use CuSeeMe Camera- group of 4	

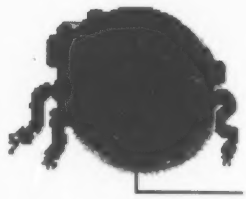
0.25	7	Review/ questions	
1	8	Work on Research project; read articles	

APPENDIX G

HANDOUT:

GUIDELINES FOR FINAL PROJECT

Guidelines For Final Project



Choose a topic to research, related to the area that you teach, to create a 5-10 minute presentation:

- Use school network programs and the Internet as information sources. From the "What's on our Network?" list, use:
  - Encyclopedia list -- 3
  - Periodicals list -- 3
  - Other Reference Sources -- LMC Catalog and at least 5 URL's
  - Record-keeping /Publishing/Presentation -- at least 2

- Create a presentation using HTML, PowerPoint, Hyperstudio, or Publisher to synthesize the information you gathered. Include:
  - Title / Credits
  - Introduction
  - Describe the project
  - Conclusion or Summary
  - Bibliography

- Possible topics:
  - Your Internet exchange project
  - Field trip preparations, requirements, etc.
  - Putting together a science fair project
  - Putting together a research paper
  - Preparing for a band concert
  - Team requirements (for students)
  - Team requirements (for parents)
  - Using a laptop to …
  - Special Olympics
  - Using Grade2/Pinnacle

APPENDIX H

HANDOUT:

LOGGING IN TO THE SCHOOL NETWORK

Logging in to the School Network

The most common and most easily prevented call for help to access computer problems is solved by simply logging onto the network as the appropriate user.

- To open a network program, you must be logged on to the network before you click on the student or teacher folder.

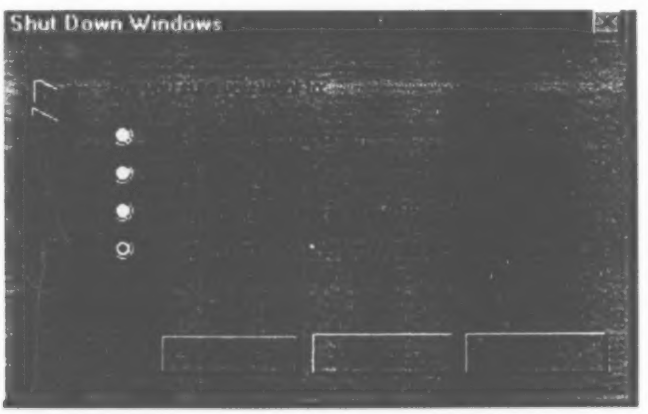
- If you were not given a network prompt when you first started the computer, then you must bring up the log in screen yourself by:
  1) holding down the "ALT" key
  2) pressing the "F4" button
  3) selecting the fourth option, "close all programs and log in as a new user"

- Before you can access student network programs, you must be logged in as "Student" which requires no password.

- Before you can access teacher network programs, you must be logged in as "Teacher" with the teacher password.

Student Login

- To change to a student user, hold down the "**ALT**" button and then press the "**F4**" button. That should call up the following screen:



- Use your down arrow to choose the 4th option: "*Close all programs and log on as a different user*". Then click the "**Yes**" button.

- That will take you to the following screen, where you will type "*student*" as the user:

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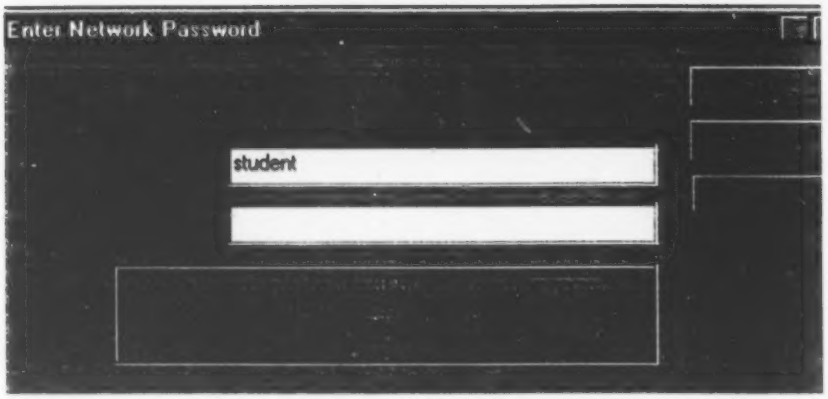
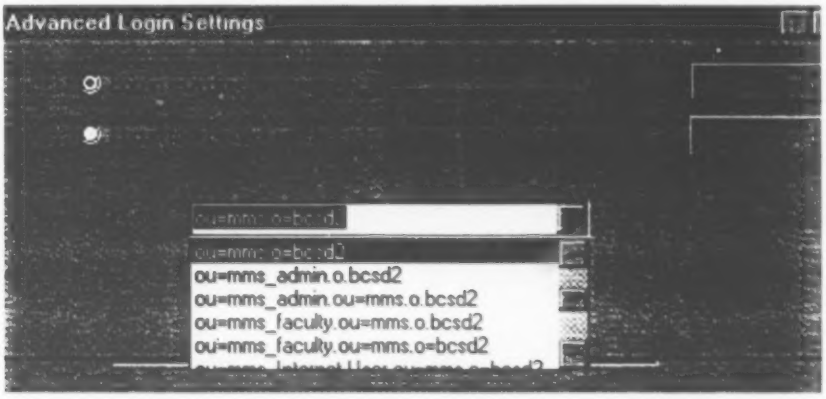


- Sometimes there is a problem if the wrong Context was previously selected
- Clicking the "**Advanced**" button will take you to the following screen where you will use the pull-down context menu to select "*ou=mms.o=b*csd2". See below:



- Once you have chosen this context, click the "OK" button.
- That will take you back to the login screen where you will click "**OK**" once again to allow the student to log on to the network.
- Remember that the student login is necessary to get to the network programs such as "Encarta", "World Book", etc. When you are logged in as Teacher, you have rights to Teacher programs only.

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Teacher Login

- When you want to use the Teacher programs, you will need to log in as Teacher before trying to access the Teacher folder.
-
- To switch from Student login to Teacher login, again go through the process of logging in as a new user:
- The generic Teacher login has the same **context** as Student (ou=mms.o=bcsd2).
- Username is "Teacher"
- The generic Teacher Password is the same as last year.
- When you are logged in as Teacher, you have rights to Teacher network programs only.
- Use the your team Fortress password to open the Teacher folder.
- Double-click on OSIRIS. You can use the same user ID and password as last year to enter grades, or you can use the team name as user ID and team password.

Other Network Problems

- Sometimes you can't access the network because your network cable was moved to another port in the box on your wall. You can look at the back of your computer and tell immediately if that computer "sees" the network. A tiny green light will be on beside the network cable if your computer is physically connected to the network. If it is not there, move the cable in the wall port box.
- Sometimes you can't access the network because your network cable has been pinched or stepped on. In this case, the cable will need to be replaced.
- Sometimes you can't access the network because there is a network system problem at the server, which is beyond your duties.

APPENDIX I

HANDOUT:

WHAT'S ON OUR SCHOOL NETWORK?

What's on Our School Network?

Encyclopedias

- World Book (accesses CD on tower)
- Encarta (accesses CD on tower)
- Groliers (accesses CD on tower)
- Encyclopedia of Science and Technology (accesses CD on tower)

Periodicals

- Electric Library (accesses Internet)
- SIRS (accesses CD on tower)
- Super Tom (accesses CD on tower)
- Current Biography (accesses CD on tower)

Other Reference

- Media Center Card Catalog
- Bookshelf, 1996-97
- SCOIS'98 (Careers and Colleges) (accesses CD on tower)
- World Wide Web (The Internet)

Record-Keeping / Publishing

- Word98 (on hard drive)
- Excel98 (on hard drive)
- Access98 (on hard drive)
- Publisher98 (on hard drive)
- Print Shop (on hard drive)

Presentation Programs

- Hyperstudio (on server hard drive
- PowerPoint (on hard drive)
- Web browsers [Netscape and/or Internet Explorer] (on hard drive)

Skills Building

- Mavis Beacon Teaches Typing (installed on hard drive)
- OneOnOne with the SAT (on network server)
- Skills Bank (Language Arts and Math) (on network server)
- Accelerated Reader (on network server)

Teacher Programs

- OSIRIS (on network server)
- Accelerated Reader Teacher (on network server)
- Grade 2 (on network server)
- RegClean
- Fortres
- Scan Disk
- Defrag

APPENDIX J

HANDOUT:

COMPUTER TIPS, TROUBLE-SHOOTING, AND PREVENTATIVE MAINTENANCE

Computer Tips, Trouble-Shooting, and Preventative Maintenance

Problems: Put technology problems you cannot solve in writing and give to media center (or in separate e-mail document to mms@hargray.com). The Media Center keeps a running list to "farm out" to either:

- Laura & Ray
- Sam & Tony
- Warranty call
- Excel Electronics (older printers)

Common problems:

- Mouse & keyboard won't work if plugged in after computer comes on.
- Video projector won't work if turned on after computer comes on.
- Computer won't hit network if no "green" light by net cable in back of computer.

Software: needs to be loaded by Media Center staff so there is a record.

New equipment:: needs to be bar-coded by media center staff

Fortres:

To disable, either:

1. Hold down the "Control" and "Shift" keys; then and the "Escape" key, or
2. Hold down the "Shift" key and double click with mouse on "Start" button

Then type in your team password

Shortcuts:

- You may want to create shortcuts and put them in student folder for: Calculator, Paint, Notebook, etc.
- (To create a shortcut, click on the program icon, right click with mouse, and select "Create Shortcut"

Periodically (Monthly)

Run:

- ScanDisk (Accessories -- System Tool)
- Disk Defragmenter (Accessories -- System Tool)
- RegClean (Accessories -- System Tool)

You will need to deactivate Fortres and may have to turn off screen saver

Clean out:

- c:\Windows\Cookies
- c:\Windows\History
- c:\Windows\Temp
- c:\Windows\Temporary Internet Files
- c:\temp

(Set time for Internet history files).

APPENDIX K

HANDOUT:

BEGINNING A WEB PAGE

USING WINDOWS95 AND WORD PAD

Beginning a Web Page Using Windows 95 and Wordpad

There are several preliminary steps that can make it easier to setup your web page.

☞ **Create a shortcut for "Wordpad" on your desktop.**

- Open your C drive.
- Within your C drive locate Program Files,
- Within Program Files locate Accessories.
- Within Accessories locate Wordpad.
- Highlight the Worpad icon.
- Then right click to see a list of options.
- Choose "Create Shortcut".
- Drag your new Wordpad Shortcut to the desktop.

Wordpad

☞ **Create a folder for your html files**

- Right click with your mouse on the desktop.
- Choose new -- folder.
- Highlight "new folder" and rename it "myteam" (or whatever)

☞ **Open Word Pad and begin**

Use the template, or follow your book

☞ **When you save the file:**

- Type the name lower case
- Make sure the name is 8 or less characters
- Change the default **.doc** extension to **.html**
- Change the file save location to your "myteam" (or whatever you named it) folder

☞ **After you have saved the file:**

- When you want to edit your file, drag your file icon to WordPad and to open it as text document.
- When you want to view it as a web document, simply click on it and it will open into your browser.

☞ **Reminders:**

- If you see a particular style on another web page that you like, look at the Source Code and use that as a guide
- You can change the color of the text, background, links (look at the color chart handout)
- Pictures must have .gif or .jpg extensions
- You can change the size of the pictures.
- Look at your file in both Netscape and Internet Explorer, if possible
- E-Mail to Laura as an attached file, or bring on a disk

Other Possibilities:

- Use html conversion function of Word, Excel, PowerPoint
- Use Word web wizard
- Use Publisher web wizard
- Use Netscape (Composer) or IE web creator
- Use web page creator on a free web publishing site

Download 30-day HTML trial editors or purchase:

- Claris Home Page
  http://www.claris.com/products/claris/clarispage/clarispage.html
- Adobe Page Mill
  http://www.adobe.com/prodindex/pagemill/main.html
- Hot Dog
  http://www.sausage.com/
- Microsoft Front Page 98
  http://www.microsoft.com/frontpage/
- NetObjects Fusion
  http://204.29.196.137/new_download.html
- Programmer's File Editor
  http://www.lancs.ac.uk/people/cpaap/pfe/

APPENDIX L

HANDOUT:

CREATE YOUR TEAM PAGE

USING A SAMPLE HTML TEMPLATE

Create Your Team Page
Using a Sample HTML Template

```
<HTML>
<HEAD>
<TITLE>Team X</TITLE>
</HEAD>
<BODY>

<CENTER><H1>My Team Page X</H1></CENTER>
<P>
<HR>
<P>Things we have done so far this year:<UL>
<LI> X
<LI> X
<LI> X
<LI> X
</UL>

<P>Things we plan before school is out:<UL>
<LI> X
<LI> X
<LI> X
<LI> X
</UL>

<P><CENTER><IMG SRC="X.jpg"></CENTER>

<P>your initials
<BR>2/7/98
</BODY>
</HTML>
```

```
<HTML>
<HEAD>
<TITLE>Team X LinkK</TITLE>
</HEAD>
<BODY>

<CENTER><H1>My Team Link X</H1></CENTER>

<P>This page links back to first page. You can put anything you want in here.
```

```
<P><CENTER><IMG SRC="me.jpg"></CENTER>
<A HREF="yourteam.html">Back to team X page</A>
<P>your initials
<BR>2/7/98
</BODY>
</HTML>
```

APPENDIX M

HANDOUT:

USING PICTURES FROM THE INTERNET

Using Pictures

If you choose to download a picture from the Internet you need to be aware of several considerations:

- If there is no indication on the web page that the image is free for downloading, then it probably is not. You will need to contact the page owner and ask permission.
- If the image is at a "free download" site, then you probably may copy it at no charge.
  - Simply choose the graphic you want.
  - Highlight it.
  - Right click with your mouse to see the options.
  - Select the option "Save Image As" and indicate your myteam folder (or whatever folder you are keeping your web files in) as the location. (You might even create a folder within the web files folder and name it "Images" to keep your pictures in)
- Indicate somewhere on you site or page where the picture came from

Other Picture Sources:

- Scan a picture
- Import from clipart
- Take your own picture with digital camera or Quick Cam
- Draw your own in Paintbrush or some other art software program

APPENDIX N

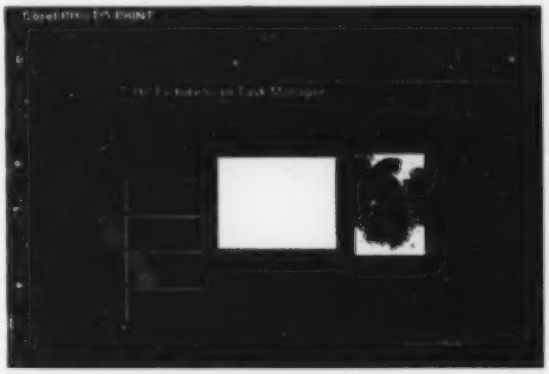
HANDOUT:

SCANNING PICTURES

Scan a Picture Using Corel PhotoPaint

Pre-Scan a Picture

- Open Corel-PhotoPaint.
- Place the picture on the scanner bed and close the lid.
- Click on "scan" to pre-scan the image.
- Choose the square cropping tool to select the area that you want.



Scan the Picture

- Click on "Accept" to scan the image area you have selected.
- From the menu bar click on "File", drag down to "Acquire", drag across to "Acquire".

Edit the Picture

- Usually the scanned image is huge and you are only seeing a percentage of it
- Increase the zoom to 100%, then select from the menu bar "Image" and drag down to "Resample".
- Change the size percentage drastically and notice at the bottom of the box the byte size of the new image.
- You may want to edit the picture with some of the tools.
- One common option is to brighten or darken the image.
- From the menu bar select "Effects", then "Color Adjust", then "Brightness--Contrast Intensity".
- Try different settings to find the effect you want.

Save the scanned picture

- Now you will need to save the image
- From the menu bar select "File", then "Save As".

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Scan a picture

- You will need to save this as a Windows bitmap (bmp) or jpeg (JPG) file.
- Pull down the save as options to choose "Windows bitmap" or "jpeg".
- Change the name of the file to something you will recognize.
- You will need to indicate that this file will be saved in your myteam folder on your desktop.

Convert a scanned picture (or a Paint picture)

- If you have a picture saved as a "Windows bitmap" file , you will next need to convert your scanned picture into a format that can be universally seen on the web. (Though Most scanning programs allow you to save as gif or jpg and the conversion process is eliminated.)
- One common graphic converter which may be downloaded and purchased from the Internet is the LViewer. Another graphic converter is Microsoft Photo Editor which comes free with many computer purchases.
- Once you have launched the Microsoft Photo Editor program, select "File", then "Open" and indicate your .bmp file in your myteam folder.
- Select "File" -- "Save As" and then change the format to gif and file extension to "gif".

APPENDIX O

HANDOUT:

TAKE YOUR OWN PICTURES

Take Your Own Pictures

Quick Cam

(for individual or small groups by the computer)

- Use little circle at front of camera to manually focus it
- Click on "take picture"
- Change the save location to appropriate destination
  (diskette or a folder on hard drive)
- Name the picture in 8 or fewer lower case letters
- Change the bitmap (.bmp) extension to jpeg (.jpg)

Digital Camera

(for roving picture-taking; it uses battery or AC adapter)

To download pictures you have taken:

- Plug camera into computer with camera software;
  (if battery is low, plug in AC adapter)
- Open camera shutter
- Open Teacher Folder – double-click "digital camera" icon
  - Go to "Camera"
    - to "Load Thumbnail"
    - to "Click on image to Select" (choose your picture)
  - Go to "File"
    - to "open selected image"
    - to "save as"
      - name it with .jpg extension
      - indicate where you want it saved
  - or you could go to "Camera"
    - to "download all images to disk" and indicate location where you want it saved,
    - then open them up in saved location and name it
  - After it's saved, select image, go to "Camera" to "delete image"

There are many other possibilities. These are only some basics.

APPENDIX P

HANDOUT:

COURSE EVALUATION QUESTIONNAIRE

Course Evaluation, May 1998
"Optimizing the School Network"

Please answer the following on a Scale of 1-10, with 1 being strongly agree, and 10 being strongly disagree?

1 2 3 4 5 6 7 8 9 10
agree disagree

____ I am able to easily log in to the school network to access the teacher programs.

____ I am able to use most features of all of the teacher programs on the network.

____ I am able to log out of the teacher portion of the network and then log in to the student portion of the network.

____ I am able to use most features of all of the students' programs on the network.

____ I am able to help students log on to the network and access student programs.

____ I have used the Internet with my class planning.

____ I have used the Internet with my class instruction.

____ I use the Internet at home for news information.

____ I feel comfortable searching on the Internet.

____ I feel comfortable directing my students to search on the Internet.

____ I would like for our school to use the network to communicate internally.

____ I would like for our school to use the network to communicate with the community.

____ I would like our school to use web message boards.

I felt the course, Optimizing the School Network, met its objectives of preparing me to mentor fellow teachers with using the network.

____ Yes ____ No

If no, things I would have changed are (use additional page if necessary)

I would have preferred the course had been offered as:

_____undergraduate credit

_____ recertification course

_____ workshop only

_____ no change in status

I would have preferred it had been offered as:

_____ traditional classroom

_____ no change in format

What did you like best about this course?

What did you like least about this course?

What would you suggest be done to improve the course?

APPENDIX Q

HANDOUT:

GENERAL FACULTY QUESTIONNAIRE,
MAY 1998

General Faculty Questionnaire, May 1998
Network Communications

Use a scale of 1-10, with 1 being strongly agree, and 10 being strongly disagree:

1 2 3 4 5 6 7 8 9 10
agree disagree

____ I am able to easily log in to the school network to access the teacher programs.

____ I am able to use most features of all of the teacher programs on the network.

____ I am able to use most features of at least two teacher programs on the network.

____ I usually need assistance logging on to the teacher portion of the network.

____ I would like some instruction with using the district's new grading and attendance program running on our network.

____ I am able to log out of the teacher portion of the network and then log in to the student portion of the network.

____ I am able to use most features of all of the students' programs on the network.

____ I am able to use most features of at least half of the student programs on the network.

____ I am able to use some features of three or more programs on the network.

____ I am uncomfortable using the network programs.

____ I am able to help students log on to the network and access student programs.

____ I have used the Internet with my class planning.

____ I have used the Internet with my class instruction.

____ I have involved at least one class in an Internet exchange project.

____ I would like to involve my classes in Internet exchange projects, but am not sure how to go about it.

____ I use the Internet at home for news information.

____ I feel comfortable searching on the Internet.

____ I feel comfortable directing my students to search on the Internet.

____ I would like some instruction on Internet search strategies.

I think there is a problem with communications in our school:

____ between the district and our school
____ among our school staff
____ between our school and the community

____ I would use our school web page if it were kept up to date and had information I could use.

____ I have constructed a web page.

____I would be willing to help keep my team's portion of the school web site up-to-date, if I knew how to create web pages.

____ I would like for our school to use the network to communicate internally.

____ I would like for our school to use the network to communicate with the community.

____ I am familiar with web message boards.

____ I would like our school to use web message boards.

___ I am not interested in any further training.